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ABSTRACT

The third of three volumes evaluating the first year field test of the Project Information Packages (PIPs) provides a cost analysis study as a key element in the total evaluation. The resource approach to cost analysis is explained and the specific resource methodology used in the main cost analysis of the 19 PIP field-test projects detailed. The major data collection plan and procedures are documented, and the cost results and analyses are presented. The minimum costs that were generated using standardized cost figures from the main analysis and a particular set of assumptions about project configuration are displayed. In the final chapter is a sample project budgeting guide, based on the same assumptions, for use by districts in estimating costs of a PIP project. (Author/MLF)

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EVALUATION OF THE FIELD TEST OF PROJECT INFORMATION PACKAGES:

Volume III – Resource Cost Analysis

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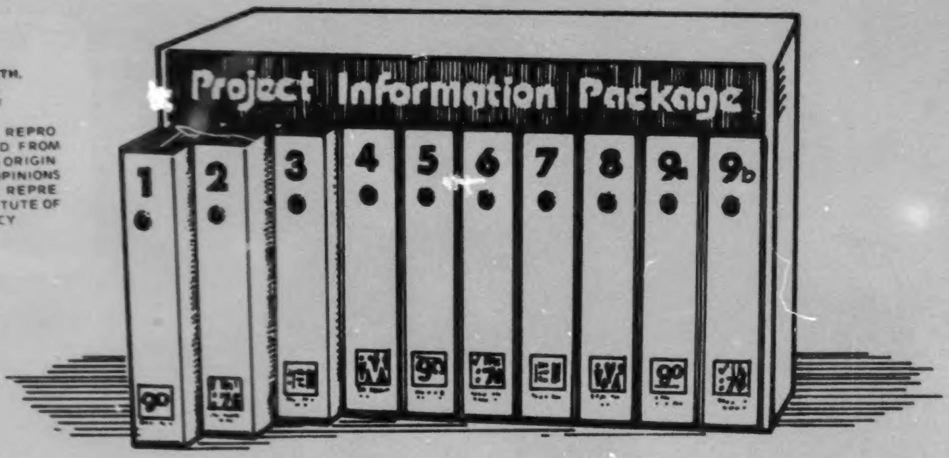

- Project Catch-Up
- Project Conquest
- High Intensity Tutoring
- Intensive Reading Instructional Teams
- Programed Tutorial Reading
- Project R-3

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EVALUATION OF THE FIELD TEST OF PROJECT INFORMATION PACKAGES:

VOLUME III - RESOURCE COST ANALYSIS

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PREFACE

This is a report of the first-year results from a two-year field test of Project Information Packages (PIPs). The field test is sponsored by USOE under Title III, Section 306, of the Elementary and Secondary Education Act. The evaluation was commissioned by USOE's Office of Planning, Budgeting, and Evaluation.

SRI is the prime contractor for the evaluation of the field test of PIPs; RMC Research Corporation, developer of the PIPs, is the subcontractor. The first year of the evaluation focused on the viability of PIPs as a mechanism for getting exemplary programs implemented in new sites. The focus for the second year is on project outcomes. Final conclusions about the success of packages as a dissemination mechanism must await information to be obtained during the second year of the field test.

Volume I reports on the concept of packaging. Volume II reports the results of a formative evaluation of the PIPs and recommends revisions. Volume III reports the results of a resource/cost analysis of PIP projects.

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FOREWORD

This cost analysis concerns projects installed in 19 school districts using Project Information Packages (PIPs). In order for the reader to understand the background of the cost study without having to refer to Volume I, we describe the PIPs and the kinds of projects in this foreword.

A PIP is a package designed to increase the probability of successful installation and replication of an effective compensatory education project in new sites by providing information to various staff members at the new site. Each PIP includes information for the director of the project, school principals, teachers, aides, and others who play significant roles in implementing the projects. PIPs are undergoing extensive revision as a result of the findings of the first field test in 19 sites. Volume II describes the recommended revisions that are now being implemented.

A PIP is a box (approximately 14 inches high, 12 inches wide, and 18 inches long) with ten components, or modules, containing descriptive literature on the instructional approach, schedules, budgets, procedural guides, filmstrips and audio-cassettes, self-instructional teacher-training programs, lists of teaching aids and equipment, materials, project personnel requirements, training information, and guidance on administrative procedures, management information systems, and evaluation of the particular program being replicated.

The ten modules in each PIP are described below according to their intended function and contents. Each module was designed to provide the adopting school with procedures, materials, and teaching routines that have been proven to work in real operating schools with functioning classrooms filled with learning children.

Starter Set: Planning

The Starter Set: Planning module provides the new project director with multimedia materials to use in presenting the project and in gaining support of parents, teachers, principals, and school boards. The purpose of this starter set is to explain briefly the key features of the project for a general audience and to elaborate on these features so the project director will be able to conduct subsequent briefings and answer questions on the project. This component includes brief one-page handouts and illustrated brochures for the project director to use in public relations.

Project Management Directory

The Project Management Directory brings together in calendar form all the details necessary for understanding and managing the model project. Key tasks in developing the model design are blocked by weeks so the director can fill in the actual event, such as a meeting with the principal, on the day it will occur. The directory summarizes the tasks for each month in a checklist format to emphasize the importance of accomplishing the tasks as close as possible to the scheduled time. The directory also provides budget-updating summaries for each month for the director to fill in. Support documents with descriptions of how the original project accomplished each task, internal memos showing style of management, alternatives for dealing with difficulties, and other practical matters are included in the directory.

Project Management Displays

Project Management Displays are designed to attract attention to the existence of the project and to elicit questions or interest concerning it. The displays provide a time schedule overview and summarize the key tasks to be performed in developing the model project and the components to be used in performing the tasks.

Staff Qualifications and Preparation Set

This set provides project directors with assistance in hiring the kinds of personnel needed to implement specific projects in the form of a staff qualifications checklist and in providing training and training mechanisms for project teachers and aides (e.g., in-service training topics).

Starter Set: Implementation

This module provides extra help in the early weeks of instruction in the new project and includes materials for decorating the classroom, a detailed calendar for the first two weeks of school, and descriptions of how to begin each new activity (testing, teaching, and the like). The essential idea of the Starter Set: Implementation is to enable new staff to create an attractive environment appropriate for the region where the project is being implemented and not to package the particular bulletin boards or decorations used at the originating site. This module therefore includes some actual materials that will be useful in a variety of contexts other than that for which they were originally designed.

Classroom Management Directory

The Classroom Management Directory, designed to correspond to the Project Management Directory in format and purpose, contains day-by-day instructions for the classroom teacher. Calendar entries indicate the sequence of events and remind teachers to perform key tasks throughout the year. The directory includes monthly task summaries in a checklist format, budget records, and supplementary sections explaining alternative strategies for accomplishing tasks and anticipating problems, and describes the practical details of operating an instructional system.

Student Relationships Album

The Student Relationships Album identifies and describes the roles of staff members in relation to students. Role illustrations are presented to convey the "flavor" of the project from a child's viewpoint.

The album deals with the difficult areas of attitude change, self-concept development, fostering achievement orientation, and eliminating prejudice. A holistic, descriptive approach with photographs and critical incidents mediates the information in this module.

Professional Relationships Guide

The Professional Relationships Guide is designed to anticipate and prevent conflicts that occurred at the exemplary site and to suggest ways of forming good working relationships in the new project. The guide clearly defines the roles and responsibilities of project and nonproject staff in relation to one another.

Hardware/Software Packet

This packet provides information on core materials as well as other instructional aides and devices from which additional selections can be made. The packet contains manufacturers' and publishers' brochures describing every item of instructional hardware and material used in the exemplary project. Space is provided for recording information on materials proven to be highly effective and on new products.

Flat Art File

This file contains reproductions of display materials developed by the original project and instructions (sometimes accompanied by templates) for the production of other materials. It enables the adopting school to make use of project-developed materials that are useful in enhancing motivation, improving self-concepts, or facilitating skill development.

Analysis and Selection Kit

The introduction of the packages to potential users and the processes within the LEAs for selecting a program and deciding to adopt it were not encompassed by the PIPs themselves. An Analysis and Selection Kit (ASK) was conceived, and prototype was developed which consisted of:

(1) A brochure for wide dissemination describing the six exemplary programs and their availability in the form of PIPs (this kind of brochure had been available for other package dissemination programs such as that sponsored by the Right-to-Read program).

(2) Further information about each program that could be obtained upon request (this information was to enable an LEA to choose that program which was best suited to its needs).

(3) A set of orientation materials (actually the very materials contained in the Starter Set: Planning component of the PIP) to enable LEA staff to orient school board, community, instructional staff, and the like, to the selected program.

History of PIP Development and Types of PIP Projects

Since the first substantial efforts in compensatory education began 10 or 15 years ago, the federal government has spent billions of dollars for special programs to serve disadvantaged children. Unfortunately, many of these programs have failed to benefit their participants, and those that have been successful have not been widely adopted. In the last several years, the U.S. Office of Education has taken a more active role in the national dissemination and replication of compensatory education programs that have achieved success in producing reliably measured achievement benefits in reading and mathematical skills.

Several strategies were conceived for making successful programs available to other school districts with similar problems. The concept of PIPs is one of the dissemination mechanisms that has attempted to go beyond demonstration and actually provide "how to" assistance in installation. Thus, the USOE's Office of Planning, Budgeting, and Evaluation (OPBE) initiated a multiyear investigation of the feasibility of packaging exemplary projects in sufficient depth and detail so the packages themselves would constitute a viable means of replicating successful practices. The first year (1973-1974) of the investigation was concerned with both the development of packaging concepts and the actual selection and packaging by RMC of six projects for field-test purposes.

In its development of the six PIPs, RMC considered at least superficially some 2,000 programs as potential candidates for packaging. Initial screening reduced this number to 136, and adequate information could be obtained for only 103 of these candidates. In-depth analysis led to rejection of 97 of the remaining candidates, 54 percent of which lacked evidence of effectiveness. Although every effort was made to find more, only six programs could be found that met all of the established selection criteria. These were:

(1) Project Catch-Up, Newport Beach, California.

(2) Project Conquest, East St. Louis, Illinois.

(3) Programed Tutorial Reading, Davis County, Utah.

(4) Intensive Reading Instructional Teams, Hartford, Connecticut.

(5) High Intensity Tutoring, Highland Park, Michigan.

(6) Project R-3, San Jose, California.

For each of the six identified effective programs, a PIP was developed. In the following sections we briefly describe the characteristics of these projects.

Catch-Up

The Catch-Up program is designed to provide remedial instruction in reading and arithmetic to disadvantaged children in schools serving low-socioeconomic-level suburban areas. Although the original program served children from preschool through the twelfth grade, the dissemination of Catch-Up is restricted to the kindergarten through the sixth grade. The major instructional emphasis of the program is on the diagnosis of learning problems through extensive use of criterion-referenced tests to ensure that students experience constant success. Learning experiences are individually prescribed and are provided by a special staff of certified part-time teachers and instructional aides in an attractive "laboratory" environment. Each teacher is responsible for the gains of 18 students and is allowed a great deal of autonomy in achieving those gains. The lab is contained within one available classroom in the school. The program operates only in the morning when both staff and students are fresh.

Conquest

The Conquest program is a clinical approach to reading that intensively diagnoses a child's reading problems through a 17-step diagnostic procedure and prescribes an individualized, structured learning program to be followed by the child throughout the year. The teacher receives extensive training in remediation, testing, and related areas.

Programed Tutorial Reading

In PTR, paraprofessionals or older students tutor underachieving first graders in beginning reading as a supplement to conventional classroom teaching. The tutoring strategy employs many of the elements of programed instruction: frequent and immediate feedback, specified format, and individualized pacing. PTR differs from programed instruction, however, in its procedure for providing cues to learning. Programed learning stresses the use of many cues in the beginning, followed by a decrease in cues. PTR uses minimal cues in the beginning, followed by an increase in cues until the child can eventually make the correct response.

Intensive Reading Instructional Teams

The Intensive Reading Instructional Teams (IRIT) program is designed to raise the level of achievement of third and fourth grade pupils who are deficient in the basic skills of language and reading and to develop in them an appreciation for and pleasure in reading. Students who participate in the program are selected on the basis of standardized reading test scores or on the recommendations of their regular teachers.

The IRIT program is divided into three 11-week cycles. Forty-five students are selected for each of the three cycles. During each cycle the students leave their regular classrooms to attend the IRIT classes for three hours each morning, five days a week. The 45 students in the program are heterogeneously divided into three groups of 15 each. During the three-hour morning, the groups of 15 students spend one hour with each of three IRIT teachers. Thus, all 45 students are with each teacher every morning.

The IRIT center is located in a home school, which is a school within the district that has available space. The program requires three classrooms and an office. Students participating in the IRIT program may come from the home school or from other schools within the district, which are referred to as sending schools. Generally, the first cycle of the program serves students from the home school and the following two cycles serve children from two sending schools within the district. IRIT teachers must keep the sending teachers informed of the students' progress throughout the cycle.

High Intensity Tutoring

HIT was designed as a peer tutoring program in mathematics and reading using highly structured materials for six and seventh graders. The sixth grade participants perform one to five years below grade level, and the seventh grade participants one to three years below grade level. At the two HIT centers (one in reading, one in mathematics) in each participating school, sixth and seventh graders are tutored by seventh and eighth graders. Tutors themselves are often performing one to three years below grade level, but they work with students who are at least two years below them. An unexpected benefit of the HIT program in its original site was that tutors gained in reading and mathematics skills as much or more than tutees.

Sullivan programmed reading and mathematics materials and the Hegge, Kirk, and Kirk remedial reading drills are used in HIT, supplemented by appropriate games and teacher-made materials. These commercial reading and mathematics materials were chosen because they carefully control the rate of introduction of new learning and provide for frequent review of a student's progress.

R-3

R-3 is a reading, mathematics, and social studies program that emphasizes student readiness, subject relevance, and learning reinforcement. All seventh grade students participate in R-3 and continue in the program through the eighth and ninth grades. Each student attends one 45-minute period in each of the three subject areas daily.

The four essential components of the R-3 program are gaming/simulation activities, individualized instruction, an intensive-involvement study trip, and parent involvement.

Field-Test Sites

Once the six PIPs were developed, they were field tested in new school districts. Grants under ESEA Title III were given to 17 school districts that agreed to try out the PIPs during the 1974-75 school year. Since two LEAs have 2 projects each, there are 19 projects in all.

I RESOURCE APPROACH TO COST ANALYSIS

Introduction

This cost analysis study is one part of a three-part evaluation of PIPs. During the 1974-75 school year, SRI, the prime contractor, addressed the question of the viability of PIPs (and the concept of packaging) as a method of disseminating exemplary educational projects to new sites. Since one aspect of viability is project costs, SRI required cost information in considering the acceptability of the PIP projects to local education agency (LEA) personnel and the implications of acceptable costs for USOE dissemination strategies. USOE had originally requested a cost-effectiveness study of the PIPs; however, since this was an implementation year, appropriate effectiveness data could not be obtained.

Although cost-effectiveness ratios could not be obtained, this cost analysis study provides three kinds of information that are key elements in the total evaluation. The first kind of information concerns the real, total costs of each of the 19 projects in the field test. An accurate picture of total costs seems essential in determining whether projects, such as the six now available in PIPs, should be disseminated widely. Costs beyond those in grant budgets, many of which are hidden to USOE (but are actual LEA costs) should be known. However, accurate figures for total costs are difficult to obtain for most programs. Many of the relevant items, such as facilities and project director salaries, are typically not included in project budgets prepared by LEAs. These costs are often borne by district general funds and, from the perspective of the LEA, are seen as "free" to the project. From the federal planning perspective, however, it is clear that the taxpayer must ultimately pay such costs and that they can have a real impact on the total proportion of national resources committed to education. Furthermore, if these six PIPs were widely adopted and PIP projects were funded in districts under their Title I allocations, the U.S. government might be supporting these total program costs, even if no direct PIP grants were provided.

The second kind of information provided by the cost study is the accurate documentation of the allocation of funds by LEAs in the field tryout. This information can also be utilized by USOE in evaluating the success of the PIP field test design, and it may prove useful in planning similar tryout evaluations in the future.* The appropriateness of funds allocation also provided a general indication of the degree of project implementation.

A third kind of resource and cost information was required for the formative evaluation of ASK and PIPs. This study of the needed revisions was conducted by the RMC staff that had identified the exemplary programs and developed the original packages. As RMC staff developed information for USOE to use in negotiating the original budgets for the field-test sites, it became clear that, to give more realistic advice, standard costs of various resources would have to be known as well as the number of those resources required for various numbers of students served.

Required is the key word here.† In general, the LEAs involved as field-test sites this year simply spent what had been budgeted under their Title III, Section 306 grant. Thus the major cost analysis reported in this volume provided standardized costs and the data on how the field-test sites spent the available funds under relatively unrestricted conditions. This, in addition to interview data in the field-test and originating sites, permitted the development of guidelines for operating projects at a minimum cost. This supplementary information is most useful for making comparisons of cost estimates for PIP projects with costs reported for other, similar projects being disseminated by USOE.

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*Volume I reports in some detail on the generally high level of project implementation; data from the cost analyses corroborated SRI findings.

†More than cost experience data is involved in determining required costs. It was necessary for RMC, in revising ASK, to decide more exactly what staff, materials, equipment, and facilities were necessary for a project to be implemented with a certain number of pupils.

In this chapter we explain the RMC resource approach to cost analysis and in Chapter II we detail the specific resource methodology used in RMC's main cost analysis of the 19 PIP field-test projects. In Chapter III we document the major data collection plan and procedures, and in Chapter IV we present the cost results and analyses. At the end of Chapter IV we display the minimum costs we generated using standardized cost figures from the main analysis and a particular set of assumptions about project configurations. In Chapter V, then, we provide a sample project budgeting guide, based on the same assumptions, for use by districts in estimating costs of a PIP project.

It must be emphasized that the major analyses reported in Chapters I-IV are concerned with the costs of the projects as implemented by the 19 field-test sites. While the field test was not designed to determine optimum configurations in terms of cost, it became clear that grant budgets negotiated with the majority of sites were large in terms of amounts absolutely necessary to add to LEA resources for implementing and operating the projects. However, they were not large in relation to total costs of all resources utilized for project implementation and operation. Most of the projects could have reduced per-pupil costs by operating in larger configurations or economizing on materials and equipment, for example. The cost tables at the end of Chapter IV and the budgeting worksheets in Chapter V take into account the minimum required expenditures. The sample budgeting worksheets will permit a school district to calculate the amount it would need to budget for one of the projects (Project Catch-Up) using local cost figures. Similar worksheets are in preparation for the remaining five projects.

Resource Versus Budget Approach

Because of the importance of proper cost analysis of educational programs we have decided to document separately the methodology and results of the main cost analysis. In particular, we believe that the resource approach taken by RMC in the analysis of the PIP program is unique and offers a consistent framework for analysis that could be adopted in other program evaluations.*

The use of budgetary per-pupil accounting costs for estimating program expenses is inadequate. For the most part, school district budgets do not separate costs for individual classrooms within a school. The use of district-wide budget costs as an estimate of cost implies that resources are used uniformly throughout a school or district. Unfortunately, this implication is usually incorrect. Education programs quite often concentrate school resources in an effort to assist a small target population. Average program costs based on budget data tend to obscure the true cost of these concentrated resources. In addition, the use of budgetary cost data neglects the value of resources inherited from past expenditures. Budget costs can also distort the evaluation of program costs by including one-time capital expenses in the estimates.

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*Recent applications have been the RMC cost analyses of compensatory reading programs in regular school-term programs and in summer programs. They have been documented in : P. Dienemann, D. Flynn, and N. Al-Salam, "An Evaluation of the Cost Effectiveness of Alternative Compensatory Reading Programs, Vol. 1: Cost Analysis," Technical Report UR-231, RMC Research Corporation, Bethesda, Maryland (September 1974); item, "Site Visit Reports for Summer Compensatory Reading Programs," Technical Report UR-225, RMC Research Corporation, Bethesda, Maryland (October 1973); and D. Flynn and N. Al-Salam, "An Evaluation of the Cost Effectiveness of Alternative Compensatory Reading Programs, Vol. 4: Cost Analysis of Summer Programs," Technical Report UR-231, RMC Research Corporation, Bethesda, Maryland (July 1975).

A more appropriate technique for estimating the cost of individual programs is to determine the actual quantity of all resources (i.e., staff, equipment, materials, and facilities) used in a program, and then estimate the cost of these resources. We refer to this technique as the resource approach to program cost analysis. Because the procedure enumerates the resources for each program separately, it allows for a more precise examination of the impact on cost of differential uses and mixes of resources. In addition, because the procedure considers all resources independent of when they were acquired, it allows for the examination of inherited resources.

Several previous studies have examined the resource approach to cost analysis.[*] The approach presented in most of these studies assumed that the identified resources were used exclusively by a particular program. In actual practice, however, exclusive use is rare and resources generally are shared by a variety of programs. For example, classroom teachers usually provide instruction in more than one subject area and equipment is shared by all teachers in a school. The techniques presented in previous studies were never modified to consider this sharing of resources. The RMC resource approach to estimating the cost of educational programs considers the use of shared resources.

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[*] See, for example, S. A. Haggart, "Program Cost Analysis in Education Planning," Paper P-4744, The Rand Corporation, Santa Monica, California (December 1971).

Other Cost Issues

There are a number of technical and conceptual issues regarding cost that must be confronted. These include the use of total versus incremental costs, the identification of both capital and annual operating costs, and the use of actual versus standard costs. We briefly discuss these issues below.

Total Versus Incremental (Implementation) Costs

Costs of individual programs, in this case PIP field-test projects, can be measured by total program costs or by incremental program costs. Total program costs include the total expenditures, both past and present, for all resources used in a program and the capital and annual operating expenses. Capital expenses are amortized over their entire life. Total program costs also include the cost of resources available within a district or assets inherited from discontinued programs that can be used in the project. Total program costs are the most appropriate format for comparing costs of different projects.

Incremental program costs measure only the additional costs incurred by a district in implementing a program. Costs for inherited assets or donated resources, which economists refer to as "sunk" costs, are disregarded and treated as free goods. Incremental costs are best used in deciding whether or not a particular project should be implemented in a specific district. They are not appropriate for making comparisons of alternative projects. In this study, we have substituted the term implementation for incremental; the concept remains essentially similar, however.

Capital and Annual Operating Costs

To organize all cost elements of a PIP field-test project, we separated costs into two broad categories: capital investment costs and annual operating costs. Capital costs are one-time expenditures needed for the initial implementation of a program. These include costs for new facilities, equipment, materials, and initial staff training. If a program is totally new (such as a demonstration project), the capital costs might also include one-time expenditures for program design and development of materials. For this study, however, we have disregarded program development costs since it can be assumed that these costs would be allocated to the PIPs themselves. Rather, we have estimated the costs of fully operational projects.

Annual operating costs are costs needed each year to operate and maintain a project. They include costs for salaries, in-service training, materials and supplies, equipment maintenance, facilities operations and maintenance, and other related services.

The primary distinction between the two categories of cost is the length of time benefits are derived from each type of expenditure. The value of capital resources is realized for more than one year, while annual expenditures (by definition) are consumed in one year or less. To facilitate making cost-effectiveness or other comparisons of alternative programs, it is necessary to combine the two costs into a single value by converting the capital investment costs into a series of uniform annual expenditures. Capital costs are amortized over their useful life using the following formula:

Equivalent Annual Cost = Capital Cost × Capital Recovery Factor (CRF),

where

$CRF = i\ (1 + i)^n/(1 + i)^n - 1$

n = useful life

i = discount rate.

The *annualized capital costs* computed in this manner can be combined with the other *annual operating costs* to give *total annualized project costs*.

Actual Versus Standard Costs

The actual cost of a resource at each school is what the school actually paid for a resource. Actual costs require the use of separate teacher salary schedules for each school district and specific price levels for individual equipment and facility costs. Actual costs will vary from school to school for the same resource, depending on local salary levels and economic conditions. Standard costs, on the other hand, are based on national averages and eliminate the local and regional variations in cost.

It is important that local administrators know the actual cost of a program, particularly the actual implementation costs of the program, because these represent the cost to the school district for instituting a program. These costs may be estimated using worksheets like those in Chapter V. However, actual costs tend to obscure the comparison of alternative school programs because of the influence of local variations in the cost. For this reason, *only standardized costs should be used to compare alternative programs*. The RMC model does not limit the type of cost, either actual or standard, that must be used.

II COST-ANALYSIS METHODOLOGY

General Approach

Prior to this study, the total number of resources required for PIP implementation was identified only for purposes of describing them in the PIPs, and the cost implications for USOE and for LEAs during actual implementation were very uncertain. Our cost analysis methodology, designed to deal directly with these problems, had the following goals: (1) the development of implementation costs and total costs of each of the 19 PIP projects that were implemented in the field-test sites, and (2) the development of budgeting worksheets that could be used by individuals at the district level for the preparation of project grant applications. In this chapter we document the methodology used to attain the first of these goals.

In Figure 1 we present the basic model used in this study. This model is relatively easy to conceptualize if the inputs are clearly understood. The three basic inputs are: resource quantities, utilization/dedication (program) factors, and unit costs. The three inputs are represented as the variables N, P, and C, respectively, and are defined as follows:

N = the number of resource units, that is, the total quantity of a resource that is available to and used by the project during the project's designated time span.

P = the program allocation factor, that is, the proportion of time that a resource is used* by the project during its

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[*] Used implies utilized by, dedicated to, or available to, depending on the resource type and the circumstances under which the resource is shared.

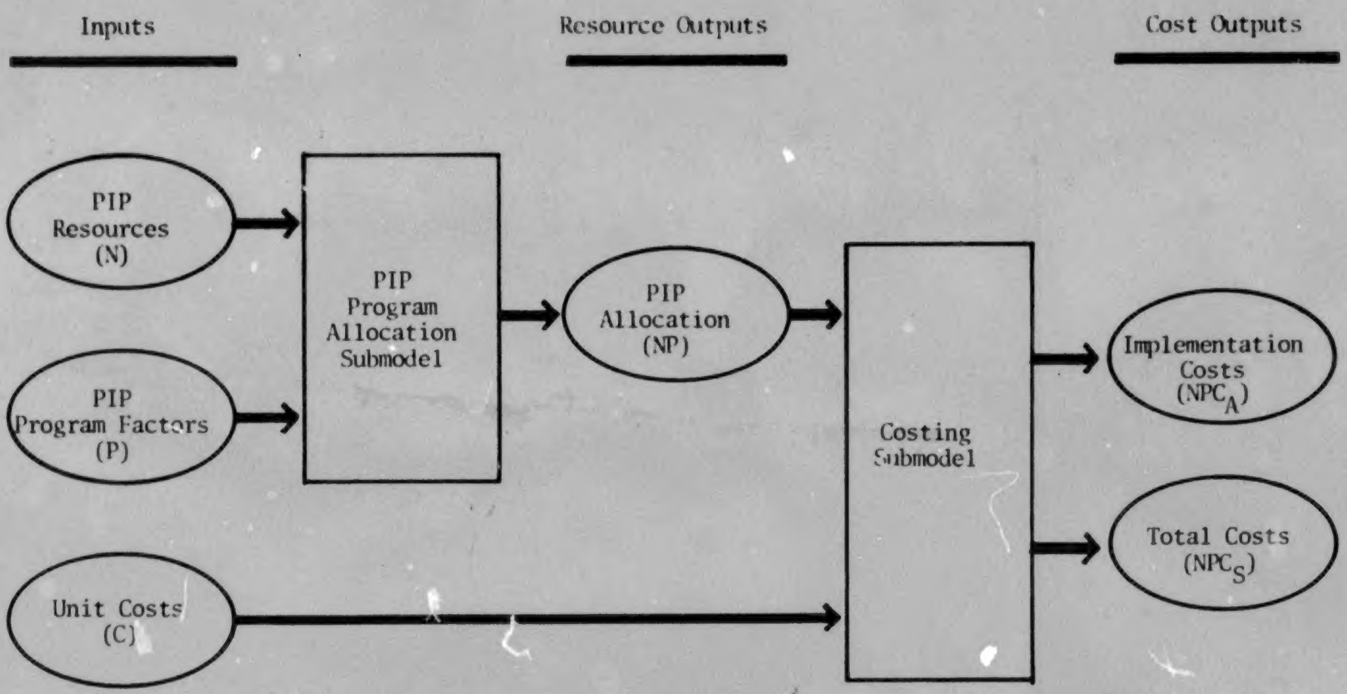
Inputs
Resource Outputs
Cost Outputs
PIP Resources (N)
PIP Program Factors (P)
Unit Costs (C)
PIP Program Allocation Submodel
PIP Allocation (NP)
Costing Submodel
Implementation Costs (NPC_A)
Total Costs (NPC_S)

FIGURE 1 PIP PROGRAM COST MODEL

designated time span with respect to the total amount of time the resource is used by all school activities during that same time span.

C = the unit cost of a resource (unit cost can be either actual unit cost or standardized unit cost).

The implementation costs in Figure 1 are actual (A) and the total costs are standardized (S).

Application of the model is simply a summation and categorization of the product of these three variables across all resources. A detailed description of N, P, and C with respect to each type of resource is presented in the following pages.

In Table 1 we present the general format used to display implementation costs (actual) for each project. The horizontal dimension identifies the quantity of resources purchased; the actual capital investment cost of these resources, if applicable; the annual operating cost of these resources; and the sum of the capital investment costs and annual operating costs. The right-hand column of the table presents a percentage breakdown of total cost by the seven major resource categories displayed in the vertical dimension of the table. Table 2 is the general format used for total cost output. The horizontal dimension identifies the number of resources available to the project, the standardized capital investments required for resources used by the project, the standardized annual operating cost for the project resources, and the annualized cost of the PIP resources (annual operating cost plus a specific proportion of the capital investment cost). The right-hand column of the table presents a percentage breakdown of the total annualized cost by the seven major resource categories. Cost per student and cost per student hour of instruction are used for comparison purposes in Chapter V.

Table 1

RESOURCE COST MODEL OUTPUT FORMAT: IMPLEMENTATION COSTS

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF					
Project Director					
Lead Teacher					
Supervisor Clinician					
Tutor Supervisor					
Teacher					
Reading Teacher					
Math Teacher					
Social Studies Teacher					
Reading Specialist					
Clinician					
Counselor					
Reading Intern					
Guidance Intern					
Tutor					
Aide					
High School Aide					
Secretary					
Bookkeeper					
Clerk					
Custodian					
FACILITIES					
Space					
Office					
Instructional					
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT					
Exclusive Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS					
Consumable					
Rewards					
Non-Consumable					
TRANSPORTATION					
Field Trips					
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST					
COST/STUDENT					
COST/STUDENT HOUR OF INSTRUCTION					

Table 2

RESOURCE COST MODEL OUTPUT FORMAT: TOTAL COST OUTPUT

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF					
Project Director					
Lead Teacher					
Supervisor Clinician					
Tutor Supervisor					
Teacher					
Reading Teacher					
Math Teacher					
Social Studies Teacher					
Reading Specialist					
Clinician					
Counselor					
Reading Intern					
Guidance Intern					
Tutor					
Aide					
High School Aide					
Secretary					
Bookkeeper					
Clerk					
Custodian					
FACILITIES					
Space					
Office					
Instructional					
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT					
Exclusive Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS					
Consumable					
Rewards					
Non-Consumable					
TRANSPORTATION					
Field Trips					
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST					
COST/STUDENT					
COST/STUDENT HOUR OF INSTRUCTION					

All line items in Tables 1 and 2 would not necessarily be filled for each project. If, for instance, a Catch-Up project does not have a lead teacher, that particular line item would be omitted from the cost summary.

PIP Cost Model

Basic Model

In this section of the report we document in detail all definitions and assumptions used in the PIP cost model. Early in the study, RMC analysts decided that the PIP cost analysis should be limited to direct costs. Direct costs as applied to this study are defined as:

> The costs of those resources that come into direct contact with the student or staff of the project for the purpose of achieving project objectives. This includes direct support costs.

This definition is fairly straightforward for equipment, materials, transportation, technical assistance, and public relations. The definition also includes fringe benefits for staff and corridors, toilets, building equipment maintenance, and any other facilities that would be required to build an addition onto a school building to house the project.

Since the model operation is actually a summation of the product of a project's resources, the resource use factors, and the unit costs, the project resources had to be categorized into a meaningful output. After a thorough analysis of the PIPs themselves and a site visit to a PIP project site the following seven major resource categories were decided upon:

- Staff
- Facilities
- Equipment
- Materials
- Transportation
- Technical assistance
- Public relations.

Our analysis showed that any resources used in the project or in direct support of the project could be placed in one of these seven categories. We discuss each category separately in the next section of this chapter.

Within each of these categories, we define N, P, and C. N is simply the number of resource units.* P and C require some additional explanation.

P (program allocation factor) plays a major role in questionnaire design and should therefore be defined in detail as early as possible in any cost analysis study. At the outset of the study, there appeared to be three ways of defining P. The most formal definition might be utilization (the portion of time a resource is actually used by a project staff member or a participant). A slightly less strict definition of P might be dedication (the amount of time a resource is retained by the project and therefore not available for use by any other activity). The least strict definition of P might be availability (the proportion of time a resource is accessible to the project). As the study progressed, it became apparent that the most appropriate definition of P was not a universal definition, but rather one that was dependent on the type of resources allocated. A definition of P for each resource category can be found in the appropriate research category sections below.

Because C, the unit cost of a resource, has many different facets, we provide here the definitions of costs that are used in this study. The cost analysis plan is divided into two major categories, implementation costs and standardized costs, defined as follows:

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*In general, the 19 PIP sites spent all of the funds allocated to them for the projects. In some sites, it was possible to purchase substantially more than the minimum materials/equipment requirements. Thus, materials/equipment figures are generally somewhat high. The effect on total cost or cost per pupil is slight, however, since, like most projects, the great majority of costs are for personnel salaries.

- PIP implementation costs (actual) are those costs required to implement a project over and above any costs required to operate the normal school curriculum.
- PIP standardized costs are those costs applied to resources used, dedicated, or available to a project based on national average costs for each specific resource.

In this study, implementation costs were usually identical to the costs actually incurred by the field-test sites (except in the case of R-3). PIP projects tend to be relatively self-contained, whereas the R-3 project is actually a supplement to the regular school curriculum. The costs incurred by the total project include regular teachers' salaries and thus are more than the incremental costs required to implement it.

Within each of the two major cost categories defined above, there are three subcategories of costs (those shown in the horizontal dimensions of Tables 1 and 2). Under actual implementation costs, we have capital investment costs, annual operating costs, and total costs. Under standardized costs, we have capital investment costs, annual operating costs, and total annualized costs. We define these six cost subcategories below:

- PIP Implementation Costs (Actual)
    - Capital investment costs are actual expenditures resulting from project implementation of those resources whose usefulness will be realized for more than one year without additional expenditure.
    - Annual operating costs are actual expenditures resulting from project implementation of resources whose entire usefulness will be realized during the year in which the project is currently operating.
    - Total costs represent the sum of capital investment costs and annual operating costs.
- PIP Standardized Costs
    - Capital investment costs are national average costs applied to resources whose use, dedication, or availability will be realized by the project for more than one year without additional expenditures.

- Annual operating costs are national average costs applied to resources whose entire usefulness will be realized by the project during the year in which it is currently operating.

- Total annualized costs represent annual operating costs plus capital investment costs times a capital recovery factor, where

$$CRP = i(1 + i)^n/[(1 + i)^n - 1] \quad ,$$

where

n = the useful life of the resource

i = 7 percent or the approximate savings that would result if the school could use the capital investment to pay off existing debts.

Total annualized costs are therefore relatively accurate approximations of all resources used by a project and direct support costs incurred by a project for a one-year period. The above definitions are germane only to this particular study and have been defined in a way that will be most meaningful to the users of the results of this study.

Resource Cost Categories

The following paragraphs relate specifically to the seven resource categories (the major headings in the vertical dimension of Tables 1 and 2) and identify the peculiarities and detailed analysis techniques used to calculate N, P, and C for use in the cost analysis model.

Staff Costs

Staff costs make up a larger proportion of a project's total budget than all other costs combined. The PIPs were fairly specific about the titles and functions of staff members and therefore greatly eased the burden of developing the methodology for staff costs. Staff members have been defined as follows:

> PIP staff members are any individuals who make a direct contribution to the attainment of the objectives of the project.

RMC used the following staff types in the cost model output:

- Project director
- Lead teacher
- Supervisor clinician
- Tutor supervisor
- Teacher
- Clinician
- Aide
- Tutor
- Secretary
- Clerk
- Counselor.

Each PIP staff was made up of some subset of the above staff types and this subset of categories appears in the cost analysis outputs (see Appendices A, B, and C).

To simplify analysis, the quantity N for staff resources under each staff type is expressed in full-time equivalents (FTEs):

> A PIP FTE is the equivalent of one person working full time based on the definition of full time for the particular staff type in the district in which the PIP was implemented.

Although this definition allows for a great deal of variability, a PIP FTE was defined as such because the purpose of the study was not to compare FTEs across PIPs but to analyze costs that are directly obtainable for the project staff members. Displaying FTEs simply provides readers with a general idea of the amount of manpower used by the project.

P was the proportion of time the staff member spent on the PIP project divided by the total number of work hours on which his annual salary was based. This proportion was usually arrived at without problem since most PIP personnel were full time on the PIP project or, in many instances, when they were not full time on the PIP project, were not employed elsewhere.

C was simply the annual salary of staff members when calculating actual implementation costs. When calculating standardized costs, C was taken from a standardized teacher schedule developed by RMC analysts using data obtained from the National Education Association (NEA) for the 1973-74 school year. Staff salaries always fall under the category of annual operating costs and are identical to the total annualized costs since the life of the salary is equal to one year.

Facilities Costs

Resources included under this heading for the cost analysis include space (the office and instructional areas) and the furniture and fixtures used by the projects. These resources are often "free" to the project, but enter into the total project costs.

Space--For the purposes of calculating costs in the model, the following two categories of space were defined:

- PIP office space is any noninstructional space used on a scheduled basis for the purpose of meeting the objectives of the PIP project.
- PIP instructional space is any space used by the PIP project for the purpose of instructing participants.

Categorizing facilities space presented no problems in the analysis. Facilities included under office space were generally the offices of the project staff, any storage space used by the project, and any space used for project staff training. In the case of tutoring projects, small rooms were sometimes used.

N was simply the net square feet of the rooms used. RMC encountered no difficulties in measuring space at the project sites. Rough measurements of rooms were made and square feet were then calculated.

P was based on the number of hours the space was used by PIP activities divided by the total number of hours the room was used by all activities. Mathematically, this is expressed as

$$P_{F.S} = \left[\frac{\sum_{i=1}^{n} HP_i \cdot A_i}{\sum_{i=1}^{n} HT_i \cdot A_i} \right],$$

where

n = total number of rooms within a given type
HP_i = number of hours the ith room is used by PIP project
HT_i = number of hours the ith room is used by all activities
A_i = area in square feet of the ith room.

Calculating the program allocation factor in this way allowed us to simply multiply the total space in square feet by the factor when applying the model.

However, a slight deviation from this calculation was required if the PIP project used the room less than one-half of the normal school day (three hours). In that case, $P_{F.S}$ was equal to the amount of space used by the project times the number of hours the project used the space divided by a full school day (six hours). Adjusting the program allocation factor in this way guarded against allocating artificially high facilities costs to PIPs because they use empty classrooms for small periods of time during a day. In the case of PIPs using classrooms for more than one-half of the school day, the full cost of the classroom was allocated to the PIP. This full cost allocation was based on the fact that if one activity uses a space for more than one-half of its available time, then it is difficult for other activities to use it.

C, with respect to facilities space for actual implementation costs, was never applicable unless space was rented. In these instances, the annual rent cost was used and sometimes included furniture and equipment. C with respect to standardized space costs was expressed in dollars per square foot for capital investment and annual operating costs and was amortized over a life of 50 years for a total annualized cost. Standardized space costs are discussed in greater detail in a later section in this chapter.

Furniture and Fixtures--For the purposes of display, furniture and fixtures were divided into two categories: standard furniture and fixtures, and specialized furniture and fixtures. Their definitions follow:

- PIP standard furniture and fixtures are those found in a PIP classroom, office, or auditorium that are required for the implementation of the normal school curriculum.
- PIP specialized furniture and fixtures are those used for implementation of the PIP program, but not falling into the above category.

Standard furniture included the following items:

- Professional desks
- Student desks
- Tables
- Chairs
- Shelf feet
- File drawers
- Bulletin boards
- Cabinets

- Blackboards
- Typing stands
- Map displays
- Partitions
- Portable stairs.

Specialized furniture and fixtures included:

- Carrels
- Carpet
- Drapes
- Air-conditioning
- AV carts
- Mobile desks
- Play sets.

Most specialized facilities were specified in the PIPs themselves. This specification eased the burden of categorization.

N was not always obvious. Items such as professional desks, student desks, tables, chairs, bulletin boards, cabinets, blackboards, typing stands, map displays, partitions, portable stairs, carrels, drapes, AV carts, mobile desks, toys, play sets, sofas, and refrigerators were easily countable as units. However, shelving was counted in linear feet, file cabinets were counted as file cabinet drawers, carpeting was counted in square yards, and air-conditioning was counted as the number of rooms cooled. These specific units were used because they were easy to identify on site and it was relatively easy to assign standardized costs to them.

P, with respect to furniture, was similar to the P used for the space in which the furniture was located. P for furniture is expressed

$$P_{F.F} = \left[\frac{\sum_{i=1}^{n} U_i \cdot HP_i}{\sum_{i=1}^{n} U_i \cdot HA_i} \right],$$

where

n = total number of rooms where furniture items were located

U_i = furniture units in ith room

HP_i = number of hours the ith room was used by the PIP project

HA_i = number of hours the ith room was used by all activities.

As with facilities space, 100 percent of the furniture was allocated to PIP if the project used facilities more than one-half of the school day and the furniture was used for no other school function. If the project used the room and its furniture less than one-half of the day, and furniture was not used for other activities, HA_i was considered to be equal to six hours to guard against attributing artifically high costs to the PIP. This is a slight deviation from the definition above. P, in this case, was closely related to our definition of dedication rather than actual utilization.

C was collected on site for many furniture items that were purchased. These actual costs were used in the implementation cost output format. C for the standardized costs was calculated using the cost data collected on site. Standardized unit costs and mean life were calculated for each furniture item using all the data collected from the site visits. Total annualized cost was then calculated using the unit cost, the life, and an interest rate of 7 percent. Maintenance cost with respect to furniture was considered negligible. RMC felt that furniture maintenance was usually handled by the school custodial staff and that these costs were included in the cost of facilities space.

Equipment Costs

At the beginning of the study, we realized that equipment costs would be one of our most difficult problems. Previous studies have shown that accurate unit costs are seldom available at the school level and, more often than not AV hardware, such as that used by many of the PIPs, is shared by all school personnel on a checkout basis. These phenomena often cause problems in identifying N, P, and C for each equipment item. To organize our tasks, equipment was defined as follows:

- PIP equipment is any audiovisual resources or other equipment used by the project for project administration or participant instruction in the areas of administration, production and reproduction of materials, sound and sound reproduction, visual projection, and photographic production.
- Exclusive equipment is equipment used only by project personnel and project participants.
- Shared equipment is equipment used by project personnel and participants and also used by individuals not connected with the project.

The definitions for exclusive and shared equipment were more than adequate for this study. However, our extensive field work has shown that the following two definitions may be more easily administered in future studies and are more analytically sound than those above:

- PIP project equipment is any equipment assigned to project personnel, a project classroom or office, or used exclusively by the project.
- Shared equipment is any equipment used on a checkout basis or used in an area for common use.

RMC feels that these two definitions were meaningful in the data collection process. In most cases, project equipment can be easily identified by the project director or project personnel, whereas shared equipment still have to be identified by whatever school personnel are in charge of the equipment.

For all equipment, N was grouped into the following eight independent categories:

- Office equipment
- Production of materials equipment
- Sound and sound production equipment
- Viewer and projection equipment
- Sound and visual equipment
- Photographic equipment
- Special reading machines
- Special math and other instructional equipment.

Throughout our analysis, we found that any equipment item could be easily placed into one of the above eight categories. Table 3 identifies the specific types of equipment included under each of the eight categories. These categories were used for both exclusive and shared equipment.

For exclusive equipment, P was always equal to 1 and generally was based on our definition of dedication. Shared equipment, however, involved a relatively complex program factor. For shared equipment items, P was mathematically defined as

$$P_{E.S} = \left[\frac{\sum_{i=1}^{n} CP_i \cdot U_i \cdot W_i}{\sum_{i=1}^{n} [(CP_i \cdot W_i) + CH_i] \cdot U_i} \right],$$

where

n = total number of schools with shared equipment item

CP_i = number of PIP classrooms in ith school

U_i = number of shared equipment items of specific type in ith school

W_i = relative equipment utilization by PIP teachers and normal curriculum teachers (0.25, 0.5, 1, 2, or 4)

CH_i = number of homerooms other than PIP classes in ith school.

Table 3

EQUIPMENT SUBCATEGORIZATION SCHEME

- Office
  - Calculator
  - Coffee Machine
  - Dictaphone
  - Lecturn
  - Typewriter
- Production of Materials
  - Ditto Machine
  - Duplicating Machine
  - Mimeograph
  - 3M Thermofax
  - 3M 209 Autocopier
  - Transparency Maker
  - Typewriter (Primary)
  - Drymount Press
  - Photoflat Weight
  - Paper Cutter
- Sound and Sound Production
  - Cassette Player
  - Cassette Player/Recorder
  - Reel to Reel Recorder
  - Record Player
  - Listening Center
  - Phono Radio Cassette
  - Stereo Radio
  - Tape/Synch-Mixer
  - Amplifier-Mixer
  - Bulk Tape Eraser
- Viewer and Projection Equipment
  - Slide Projector
  - Overhead Projector
  - Opaque Projector
  - Filmstrip Projector
  - Filmstrip Viewer
  - Filmloop Projector
  - Movie Screen
  - Microfilm Reader
- Sound and Visual
  - Cassette/Filmstrip Projector
  - Spellbinder
  - Sound/Filmstrip Viewer
  - 16mm Projector
  - Television
  - Video Tape Equipment
- Photographic
  - Camera
  - Tripod
  - Ektographic Visual Maker
- Special Reading Machines
  - Language Master
  - Controlled Reader
  - Tach-X
  - Audio Card Reader
  - Hoffman Machine
  - Singer Readermate
  - Voxcom
  - Timers
- Special Math and Other Instructional
  - Calculator
  - System 80
  - Tutor Computor
  - Mathiputer
  - Telebinocular

Each of the required inputs to the above equation were collected using questionnaires similar to the IRIT questionnaire in Appendix D. Each element is relatively straightforward except for W_i, the relative-use weight. W_i was collected from those individuals in charge of all shared equipment items. The respondent was asked if the PIP staff used the equipment much less often, less often, about the same, more often, or much more often than non-PIP teachers in the school. The weights 0.25, 0.5, 1, 2, or 4 were assigned to each of the above responses, respectively. A crude measure of relative use for shared equipment items was arrived at in this way, allowing equipment costs for shared items to be allocated crudely on the basis of utilization. The number of homerooms and PIP classrooms were used in the shared equipment utilization factor primarily because of the ease with which they could be understood by questionnaire respondents and their relatively close relationship to the seemingly equitable allocation of equipment costs.

C was generally based on data collected on site. Capital equipment costs and equipment life were calculated using data collected on site; actual costs were displayed in the implementation output format. The averages of specific equipment item costs collected over all projects are displayed when standardized costs are presented. A 7 percent interest rate was used to calculate total annualized costs. Annual operating costs included equipment maintenance costs, with annual equipment maintenance equaling 0, 5, or 15 percent of the capital costs of the specific equipment item. These maintenance percentages were based on data from RMC's previous cost analysis of compensatory reading programs or on the authors' best judgment. More detail concerning these standardized costs for equipment items is included in a later section of this chapter.

Materials Costs

During its cost analysis of compensatory reading programs, RMC discovered that collecting detailed itemized materials costs was a futile exercise which would consume more time than collecting all other data and that the resulting information did not justify the costs to the conduct of the study. RMC therefore decided that they would collect budget expenditures for materials in total dollar amounts, and, wherever possible, copies of itemized receipts. In at least one instance for each PIP program (e.g., Conquest, Catch-Up, and the like), itemized expenditure data were collected and the usable life of each item was recorded. Using this data, materials for each project were divided into three categories, consumable materials, nonconsumable materials, and rewards, on the basis of the following definitions:

- PIP materials are any instructional or administrative materials or hardware/software used in attaining the objectives of the PIP programs. Included are books, instructional games, kits, program instruction material, and software components of hardware/software systems (films, tapes, records, and the like).
- Consumable materials are any materials fully expended during the program year in which they were purchased.
- Nonconsumable materials are any materials whose full value is not recognized during the program year in which they were purchased.
- Rewards are resources given to project participants in recognition of the attainment of program objectives.

N was in effect either not applicable or equal to 1 because total cost figures for consumable and nonconsumable materials were used as opposed to unit prices.

P was always equal to 1 because materials were not usually shared across projects. This was found to be the case with the materials used at all PIP sites visited.

C was simply the total expended dollar amounts for consumable materials, nonconsumable materials, and rewards.[*] Standardized costs were not derived in any special way for materials. In the total cost output format, standardized costs were identical to actual costs.

By definition, rewards and consumable materials are entirely utilized during the year in which they are purchased. Therefore, annual operating costs and total annualized costs for these categories are identical. The cost of nonconsumable materials was always amortized over a four-year period using an interest rate of 7 percent. A figure of four years was derived using data obtained during our site visits. In both implementation and total cost output formats, nonconsumable materials costs are presented as capital costs; consumable materials and rewards are presented as annual operating costs.

Transportation Costs

Transportation costs were usually easy to identify at the project sites because traditional budgetary procedures were not unlike those used in our resource cost analysis. We define PIP transportation costs as:

> The costs of any resources used or costs incurred as a result of transporting PIP staff or project participants to and from instructional periods, transporting staff for the purposes of project administration (including out-of-town travel and per diem), and all costs associated with field trips for project participants.

For purposes of display, transportation costs were divided into field trip costs, student transportation costs, and staff transportation costs. In addition, staff transportation costs were further broken down into local and out-of-town transportation costs.

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[*] Recommended minimum amounts based on original and tryout site experience are given in Table 13.

N was either not applicable or always equal to 1. On occasion, only bus miles or personal automobiles miles were collected. A cost of 41¢ per mile was applied to bus miles and a cost of 14¢ per mile was applied to automobile mileage.

P was always equal to 1, because the collection of transportation cost data involved only those costs applying directly to the project site.

C was simply the actual cost incurred by the project. All transportation costs were included under annual operating costs and assumed to have a life of one year. Actual costs collected from the project sites were used when standardized costs were to be displayed.

Technical Assistance Costs

Technical assistance, as reported by the project sites, played a relatively minor role in the resource cost analysis. We define PIP technical assistance as:

> Any assistance or advice received in implementing the PIP program, selecting project personnel, training staff and personnel, or evaluating the impact and effectiveness of the PIP project.

N was either not applicable or in effect equal to 1. In instances where only the number of technical assistance man-hours could be assessed, a cost of $15 per hour was used. The time spent at a project by audio-visual or materials manufacturers' representatives was not counted as technical assistance.

P was always equal to 1 because only project cost data were collected.

C represented the actual costs collected at each site. Technical assistance costs were always included under annual operating costs in the model output format. Actual costs were used when standardized costs were called for.

Public Relations Costs

Public relations costs were included as a line item in the model output format simply because these costs did not conveniently fit into any of the other categories. Public relations costs are defined as:

> Any resources used for developing understanding and good will between the PIP project and the general public (usually parents of project participants).

N was either not applicable or equal to 1 because total actual costs were always used.

P was always equal to 1 because public relations were always project specific.

C simply represented the costs incurred for public relations at each site. Public relations costs were always itemized under annual operating costs and were always identical on both implementation and total costs output formats.

Standardized Unit Costs

In this section of the report we discuss the different categories of unit costs used and the manner in which these costs were calculated. We define standardized unit costs as:

> Costs applied to specific resources used, dedicated, or available to a project based on national average cost, not on local and regional variations in costs.

Staff Standardized Unit Costs

Three distinct procedures were used to calculate staff standardized unit costs. The first applied to teachers; the second to aides, tutors, and secretaries; and the third to all other project personnel.

Project teacher salaries were extracted from a table produced using a report prepared by NEA. This report presented data from 1,352 salary schedules for teachers during the 1973-74 school year. The 1,352 salary schedules were taken from school systems with enrollments of 6,000 or more as of October 1, 1972. RMC developed Table 4 using NEA's mean minimum teacher salary for four levels of preparation (bachelor's degree, master's degree, master's degree plus 30 credits, and doctor's degree), the mean number of salary increments for each level of preparation, and the mean amount of increment for each level of preparation. Each salary listed in the table was then increased by 20 percent to account for fringe benefits. This 20 percent figure was based on the average of the proportion of fringe benefits provided to teachers at all PIP sites visited. With this table and data from site visits, the derivation of standardized teacher costs was a simple matter of identifying the preparation level and years of experience of each teacher and then converting these figures into a standardized salary via the table.

Fringe benefits varied widely from district to district. In general, they consisted of four basic elements: health insurance, life insurance, leave time, and Social Security payments.

Standardized salaries for secretaries, aides, and tutors were developed by calculating mean salaries from all PIP sites visited. Salaries were increased by 20 percent to account for fringe benefits. The total standardized secretary salary including fringe benefits was $6,653 per year. The total standardized tutor/aide salary including fringe benefits was $3,706 per year.

Table 4

PIP COST ANALYSIS TEACHER SALARY SCHEDULE
(In 1974 Dollars)

Preparation Level	Schedule Variables		Years of Experience													
	Base	Increment	0	1	2	3	4	5	6	7	8	9	10	11	12	13+
BS/BA	7,720	340	7,720	8,060	8,400	8,740	9,080	9,420	9,760	10,100	10,440	10,780	11,120	11,460	11,460	11,460
with Fringe (20%)			9,264	9,672	10,080	10,488	10,896	11,304	11,712	12,120	12,528	12,936	13,344	13,752	13,752	13,752
(BS/BA) + 30, MS/MA	8,586	377	8,586	8,963	9,340	9,717	10,094	10,471	10,848	11,225	11,602	11,979	12,356	12,733	13,110	13,487
with Fringe (20%)			10,303	10,756	11,208	11,660	12,113	12,565	13,018	13,470	13,922	14,375	14,827	15,280	15,732	16,184
(BS/BA) + 60, (MS/MA) + 30	9,437	410	9,437	9,847	10,257	10,667	11,077	11,487	11,897	12,307	12,717	13,127	13,573	13,947	14,357	14,767
with Fringe (20%)			11,324	11,816	12,308	12,800	13,292	13,784	14,276	14,768	15,260	15,752	16,288	16,736	17,228	17,720
(BS/BA) + 90, (MS/MA) + 60, PhD/EdD	10,183	412	10,183	10,593	11,007	11,419	11,831	12,243	12,655	13,067	13,479	13,891	14,303	14,715	15,127	15,539
with Fringe (20%)			12,220	12,714	13,208	13,703	14,176	14,692	15,186	15,680	16,175	16,669	17,164	17,658	18,152	18,647

8

Standardized salaries of project directors, lead teachers, supervising clinicians, tutor supervisors, and counselors could not be calculated using our standardized teacher salary schedule because, in most cases, individuals of supervisory level were provided with an additional salary increment. Therefore, the standardized salaries of the above staff types were calculated as a proportion of the actual salaries. The proportion used was the ratio of standardized to actual teacher salaries at the same project site. Mathematically, this is expressed as

$$S_{O.S} = \left[\frac{\sum_{i=1}^{n} TSS_i}{\sum_{i=1}^{n} TSA_i} \right] \cdot [O_{A.S}],$$

where

$S_{O.S}$ = other staff members' standardized salary

n = total number of PIP teachers

TSS_i = the ith PIP teachers' standardized salary

TSA_i = the ith PIP teachers' actual salary

$O_{A.S}$ = other staff members' actual salary.

The fringe benefit figure of 20 percent is included in this equation since it is simply a proportion of the standard teacher salary. RMC analysts felt that this method of calculating standardized costs for supervisory personnel accurately reflected the experience of these individuals.

Facilities Standardized Unit Costs

Space

The derivation of accurate figures for use in the calculation of standardized costs for facilities space was no simple matter and required a relatively large amount of effort with respect to other standardized unit cost figures. Data on facilities space were collected on site in net square feet for all space used in implementing the PIP programs. An attempt was made during the site visits to collect historical information on the construction, utilities, and operations and maintenance costs of school buildings. Accurate information simply was not available, however. After analyzing the collected data, we realized that additional avenues for developing these costs had to be investigated. We discovered that the Montgomery County, Maryland, school system keeps very detailed historical records concerning the cost of construction and the cost of utilities for each of the school buildings in its system. We obtained access to this information and analyzed the construction costs of two elementary schools that were under construction. Construction costs, including architectural fees, site development, and building construction, were calculated at $36.86 per gross square foot. This per-square-foot cost does not include the cost of land or the cost of any furniture or equipment included in the builder's fee. These two costs were omitted because the life of land is infinite and can be sold at any time for more than the original purchase price, and the cost for furniture and equipment is calculated elsewhere in this cost analysis. Since our analysis was based on the cost per gross square foot of space and the site visit data were based on net square feet, a relationship of 1.1 was used to convert gross square feet into net square feet. This was done by multiplying $36.86 by 1.1, giving a figure of $40.55 per net square foot for construction costs.

An additional aspect of space cost requiring consideration is that of direct support space costs. Using the data collected from Montgomery County and the analyst's judgment about what direct support space would be needed if additional construction were required to house the PIP projects, we determined that an additional 35 percent of net square feet would be required for direct support of PIP projects. This figure includes space requirements for storage, toilets, corridors and lobbies, and mechanical equipment. By adding this additional 35 percent to our $40.55 per net square foot figure, we arrive at a total cost of $54.65 per net square foot of space used by the PIP projects for construction costs. While this figure is very accurate for Montgomery County, it is not representative of the national average. To help convert this number to a national statistic, we retained the services of the F. W. Dodge Division of Mc-Graw Hill, a nationally recognized leader in the area of calculating national construction cost estimates. F. W. Dodge informed us that national average construction costs for elementary school buildings were 95 percent of those same construction costs for Montgomery County. Our figure of $54.65 per net square foot was therefore multiplied by a factor of 0.95 to arrive at a final figure of $51.92 per net square foot for construction costs.

Annual operating costs for Montgomery County schools include the cost of utilities, the cost of custodial services, and the costs of security and operations and maintenance. An analysis of 10 elementary schools in Montgomery County showed these costs to be $1.60 per gross square foot. By applying our factors of 1.1 (converting net square feet to gross square feet), 1.35 for direct support space, and 0.95 as a factor for the relationship between costs in Montgomery County and costs in the entire United States, we arrive at a figure of $2.25 per net square foot for the annual operating costs of facilities space. By using these two figures ($51.92 per square foot for construction costs and $2.25 per square foot for annual operating costs), we can calculate total annualized costs per net square foot. Construction costs per square foot are amortized over 50 years at an annual interest rate of 7 percent, providing an annual rate of $3.76 per square foot per year. Added to the annual operating costs per net square foot, this figure gives us a total annualized cost of $6.01 per net square foot.

The following three standardized cost figures were developed:

- $51.92 per net square foot for construction costs or capital costs.
- $2.25 per net square foot for annual operating costs.
- $6.01 per net square foot for total annualized costs.

Furniture and Fixtures

Standardized unit costs for furniture and fixtures were derived using data collected at the 19 PIP sites supplemented with data obtained from RMC's report on the cost of compensatory reading programs. Two types of standardized costs were developed for furniture and fixtures: capital costs and total annualized costs. For each item included under furniture and fixtures, Table 5 displays the useful life of that item, its capital investment cost, and its total annualized cost. Capital investment costs were calculated based on data collected at each site. Total annualized costs were calculated by amortizing the capital investment costs over the life of the equipment and using a 7 percent interest rate.

Equipment Standardized Unit Costs

The standardized unit costs for equipment items were developed in a manner similar to the one used for developing the standardized unit costs for furniture items. Capital investment costs for equipment items were gathered on site and averaged across all sites for use as standardized costs. When cost data were not available from the site visits, the figures in RMC's report on the cost of compensatory reading programs were used. For each equipment item, Table 6 displays the standardized life of that item, its capital investment cost, annual operating cost, and total

Table 5

STANDARDIZED COSTS FOR FURNITURE AND FIXTURES

Equipment	Life	Capital Investment Cost	Total Annualized Cost
REGULAR			
Professional Desk	20	$194.67	$18.37
Student Desk	10	10.69	1.52
Tables	20	44.00	4.15
Chairs	15	49.00	5.38
Shelf Feet	20	3.75	.35
File Drawers	15	30.89	3.39
Bulletin Board	20	31.50	2.97
Cabinet	20	82.93	7.83
Blackboard	20	41.83	3.94
Typing Stand	10	55.00	7.83
Map Display	10	50.00	7.12
Partition	10	180.00	25.63
Portable Stairs	20	100.00	9.44
SPECIAL			
Carrel	20	85.83	8.10
Carpet (square yards)	5	6.54	1.59
Drapes	10	50.00	7.12
Air-Conditioning (room)	10	400.00	56.95
AV Cart	10	64.29	9.15
Mobile Desk	10	55.00	7.83
Toys	1	5.00	5.00
Play Sets	4	20.00	5.92
Sofa	4	300.00	88.80
Refrigerator	10	400.00	56.95

Table 6

UNIT STANDARDIZED EQUIPMENT COSTS

Equipment Type	Life	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost
OFFICE				
Calculator	5	$ 210.00	$ 10.50	$ 61.69
Coffee Machine	3	40.00	0.00	15.24
Dictaphone	10	400.00	20.00	76.95
Lectum	10	120.00	6.00	23.08
Typewriter	10	470.00	23.50	90.42
PRODUCTION OF MATERIALS				
Ditto Machine	5	465.00	23.25	136.65
Duplicating Machine	5	420.00	21.00	123.43
Mimeograph	5	450.00	22.50	132.24
3M Thermofax	10	360.00	54.00	105.26
3M 209 Autocopier	10	1,800.00	90.00	346.29
Transparency Maker	5	350.00	52.50	137.85
Typewriter (primary)	10	240.00	12.00	46.17
Drymount Press	15	185.00	9.25	29.56
Photoflat Weight	20	17.00	0.00	1.60
Paper Cutter	20	15.00	0.00	1.41
SOUND AND SOUND PRODUCTION				
Cassette Player	5	50.00	7.50	19.69
Cassette Player/Recorder	5	75.00	11.25	29.54
Reel to Reel Recorder	10	180.00	27.00	52.63
Record Player	10	80.00	12.00	23.39
Listening Center	5	65.00	3.25	19.10
Phono Radio Cassette	5	280.00	14.00	82.28
Stereo Radio	10	70.00	3.50	13.47
Tape/Synch-Mixer	10	60.00	3.00	11.54
Amplifier-Mixer	10	25.00	1.25	4.81
Bulk Tape Eraser	15	12.00	0.00	1.32
VIEWER AND PROJECTION				
Slide Projector	10	180.00	27.00	52.63
Overhead Projector	10	130.00	6.50	25.01
Opaque Projector	10	385.00	19.25	74.07
Filmstrip Projector	10	115.00	5.75	22.12
Filmstrip Viewer	10	25.00	3.75	7.31
Filmloop Projector	5	130.00	19.50	51.20
Movie Screen	10	40.00	0.00	5.69
Microfilm Reader	10	185.00	9.25	35.59
SOUND AND VISUAL				
Cassette/Filmstrip Projector	5	215.00	32.25	84.68
Spellbinder	-	--	0.00	60.00
Sound/Filmstrip Viewer	5	185.00	27.75	72.86
16MM Projector	10	500.00	25.00	96.19
Television	5	200.00	30.00	128.77
Video Tape Equipment	10	2,900.00	145.00	557.91
PHOTOGRAPHIC				
Camera--Super 8	5	340.00	17.00	99.92
--Instamatic	3	35.00	0.00	13.33
Tripod	10	50.00	0.00	7.12
Ektographic Visual Maker	5	110.00	0.00	26.82
SPECIAL READING MACHINES				
Language Master	10	235.00	11.75	45.21
Controlled Reader	5	245.00	36.75	96.50
Tach-X	10	215.00	10.75	41.36
Audio Card Reader	5	190.00	28.50	74.84
Hoffman Machine	5	390.00	58.50	153.61
Singer Readermate	10	150.00	22.50	43.86
Voxcom	10	120.00	6.00	23.08
Timers	1	8.00	0.00	8.00
SPECIAL MATH AND OTHER INSTRUCTIONAL				
Calculator	5	32.00	1.60	8.40
System 80	-	--	0.00	30.00
Tutor Computor	10	1,200.00	60.00	230.86
Mathiputer	5	250.00	12.50	83.47
Telebinocular	10	335.00	16.75	64.45

annualized cost. Annual operating costs for equipment items are actually the average cost of maintenance required for those equipment items. Maintenance costs for equipment items were assigned based on a percentage of the capital investment costs. This method is somewhat traditional in the area of equipment cost analysis. Three somewhat arbitrary categories of maintenance requirements were used for analytical convenience. Equipment items requiring no maintenance at all were given an annual operating cost of $0.00; equipment items requiring limited maintenance were assigned an annual operating cost of 5 percent of their capital investment costs; and equipment items requiring substantial maintenance were given an annual operating cost equal to 15 percent of their capital investment costs. Equipment items were assigned to the three categories above based on the authors' familiarity with the equipment.

Total annualized costs for equipment items are equal to the sum of the capital investment costs amortized over the life of the equipment at an annual interest rate of 7 percent plus the annual operating costs. Equipment items such as Spellbinders and System 80s tended to be rented by the projects rather than purchased. For these two items, the actual rental cost was used for both annual operating costs and total annualized costs; capital investment costs were left blank. Amortization using the 7 percent interest rate applied only to equipment with a life greater than one year.

Materials, Transportation, Technical Assistance, and Public Relations Standardized Costs

Standardized costs for materials, transportation, technical assistance, and public relations were in most cases defined as the actual costs incurred at each site because, in many cases, information at the sites was not available in terms of units. Materials and public relations standardized costs were always equal to actual costs. Occasionally, transportation units were expressed in bus miles or personal automobile miles. In these cases, a standardized cost of 41¢ per mile was used for bus transportation and a standardized cost of 14¢ per mile was used for personal automobile transportation. In situations where technical assistance was expressed in man-hours, a figure of $15 per hour was used as a standardized cost. These figures were all based on data collected at the PIP sites supplemented with information collected in RMC's study of the cost of compensatory reading programs.

III DATA COLLECTION

In this chapter we discuss the data collection plan, the development of data collection instruments, and the process of collecting data.

Data Collection Plan and Sample

To implement the methodology discussed in the preceding chapter, four categories of data were required:

- PIP project/school characteristics.
- Quantities of utilized resources.
- Actual costs of utilized resources.
- Information on which allocation factors could be developed for distributing resources among the PIP projects and other school activities.

Nearly all data were collected from the 19 PIP project sites. Some supplemental data, particularly related to facilities, were obtained from other sources. These supplemental data are discussed later in this chapter.

There are six PIP programs and two to five sites implementing each program. The number of field-test projects during the 1974-75 school year is shown below by PIP program type.

PIP Program	Number of Project Sites
Catch-Up	5
Conquest	3
High Intensity Tutoring (HIT)	2
Intensive Reading Instructional Teams (IRIT)	3
Programed Tutorial Reading (PTR)	2
R-3	4
Total number of PIP project sites	19

The sample for this study consisted of all 19 PIP projects and the schools in which they were implemented.

Questionnaire Development

A questionnaire was designed for each of the six PIP programs so organizational differences between the six programs could be addressed. This made it much easier for the respondents to provide the information needed for the cost analysis. Four of the six PIP programs (Catch-Up, Conquest, HIT, and PTR) were operating in more than one school in an LEA. As a result, information for these programs was collected by two questionnaires: one to be completed by the project director and the second to be completed by a project staff member in each of the project schools. There was only one questionnaire for the other two PIP programs (R-3 and IRIT) since they involved only one school in an LEA.

Although there were 10 distinct resource questionnaires, they all collected the same information, as described below. A typical questionnaire is presented in Appendix D.

The basic structure of the resource questionnaire consisted of eight sections:

- General school characteristics
- Staffing
- Facilities
- Equipment
- Materials
- Transportation
- Technical assistance
- Other resources.

For the PIP programs that involved two questionnaires, the project director questionnaire had only seven sections (there was no section on general school characteristics), and the school staff member questionnaire had four sections: general school characteristics, facilities, equipment, and materials. The project director questionnaire collected information on newly purchased items, while the school staff member questionnaire was concerned with all items that the PIP project used--whether newly purchased or existing from previous school years. The eight sections of the resource questionnaire are described below.

School Characteristics

This section of the questionnaire gathered general school demographic data, such as enrollment and project participation; numbers of classrooms, homerooms, and teachers; and facility characteristics. These data are the baseline information necessary to apportion resources that the PIPs share with other school activities. The cost of a certain resource can be divided, for example, among the teachers, classrooms, or homerooms in a school, depending on which is the most analytically sound. The facility descriptors provide the basis for estimating the cost of the total school facility.

The next six sections of the questionnaire gathered data on each of the six major resource categories that constitute the cost of the PIP project as described below.

Staffing

Data were collected on all staff members who worked directly for the PIP project. This included their salaries, the proportion of their time devoted to the PIP project, and the distribution of their time between the functional areas that conceptually made up their working hours. The information obtained was very detailed because staff costs are such a large proportion of total program cost.

Facilities

Facilities include the space and furniture requirements of the PIP projects. This section gathered data on each space unit (e.g., classroom) that the project used, including its size, the furniture in it, and other descriptors that would significantly affect the cost of the facility. Data were gathered on furniture purchased specifically for the PIP project. This information provided the means for calculating the start-up and implementation costs of the project. Facilities are generally the second largest resource category from a total cost standpoint.

Equipment

Instructional equipment is equipment used for instruction or its reinforcement. Information was gathered on equipment used exclusively by the project staff and shared with other school staff. Capital costs and expected-life data were collected to estimate annualized unit equipment costs. An indication of the frequency of repair or maintenance of each equipment item was solicited. Data on the quantity, unit cost, and use of each equipment item was collected.

Materials and Software

This resource category includes books, software components of a hardware/software system, instructional games, kits such as the SRA Reading Lab, programmed instruction materials, tests, and the like. Data were gathered on quantity, costs, and life of resources. However, because materials are a relatively small proportion of total costs and detailed information is difficult to obtain, particularities were avoided.

Data were gathered on materials in two groups: (1) materials purchased by the school in previous years, and (2) materials purchased by the project or school during the current year. This procedure minimized the burden of the respondent, who could provide the information he knew best (i.e., purchases during the current year) separately from the information he was less familiar with (i.e., purchases from previous years).

Transportation

In some cases, transportation costs represent a significant portion of total costs, such as when major field trips, busing of students from other schools, and reimbursement to staff for personal car mileage are included as a part of the PIP design. Key data items were collected to provide a basis for estimating transportation costs as they related to the PIP project.

Technical Assistance

The 1974-75 school year was the first year during which the PIP programs were implemented. During the first year of operation, some technical assistance from outside consultants was used to help implement or evaluate the program. This information was gathered on outside consultations and the costs associated with them.

Other Resources

Information was obtained on any resources that the respondent did not include in the categories above. However, with one exception, the information collected was placed within one of the regular resource categories. The exception was public relations. These activities included the use of resources for developing understanding and good will between the PIP project and the public.

Supplemental Data

To develop the standardized costs for each type of PIP program, it was necessary to obtain data in addition to what was supplied from the PIP site visits. We discuss these supplemental data and their sources in Chapter III in the section entitled "Standardized Unit Costs." Thus, we present only a brief summary here.

Teacher Salaries

The development of standardized teacher salaries eliminated regional differences and allowed us to compare these costs among PIP projects. The standardized salaries are national averages based on NEA teacher salary schedules for the 1973-74 school year.

Facilities

The national average costs for facilities construction or capital costs and for facilities annual operating costs were developed from data obtained from two sources. First, the Montgomery County Public School System in Maryland provided us with detailed data on construction costs and facilities operating costs for elementary schools. To convert the Montgomery County figures to national averages, we used the index provided by the F. W. Dodge Division of McGraw-Hill.

For developing the standardized costs of facilities in the category of furniture and fixtures, we supplemented the data obtained from our site visits with RMC data from a previous cost study of compensatory reading programs.

Equipment

To develop standardized unit costs of equipment items, site visit data were supplemented by data from RMC's study on the cost of compensatory reading programs.

Site Visits

Pretest of the Resource Questionnaire

Of the six different PIP programs, the cost analysis of the R-3 program was the most complicated. An R-3 project was selected for the pretest of the resource questionnaire because we felt the R-3 program would be the "worst case" from the standpoint of encountering difficulties in completing the questionnaire. Improvements and suggestions resulting from the pretest at the R-3 project were applicable to all PIP programs.

Much was learned from the pretest. The original approach to collecting utilization information for instructional equipment proved to be difficult; therefore, the questionnaire was revised to its current form. The feasibility of collecting information concerning facilities was substantiated. An improved approach to collecting data on the many types of instructional materials used in PIPs was developed as a result of suggestions from the R-3 project director. In general, the pretest effort proved to be very valuable in substantiating the design of the questions for most of the resource questionnaire and in suggesting definite improvements for those parts that required change.

Site Visits for Data Collection

RMC cost analysts each spent an average of two days per site collecting the resource information called for in the questionnaires. All sites were visited during March of 1975. Visits were scheduled late in the school year to allow for as much depletion of project funds as possible. This procedure improved the accuracy of our results substantially since few estimates were required concerning the purchase of resources and their use. If uncertainty did exist concerning the use of unspent funds, phone calls were made to project directors during May to verify the use of the funds.

Generally, site visit plans were arranged two or three weeks in advance and all visits were scheduled at the convenience of the project director. Visits were scheduled every other day; any changes in the visiting schedule were made as soon as possible so project operations would not be hampered. To ease disruption, calls were made to district superintendents to notify them of our plans and schedule.

On-site data collection generally involved only the project director; an occasional question was asked of other school or project staff. A morning session was usually conducted with the project director; during this session, data on project staff and expenditures were collected. Afterward, visits were made to classrooms where resource and utilization data were gathered. Occasionally, visits were made to school or district offices to gather expenditure data and talk with school officials about the study.

Problems were seldom encountered; when they were, however, the flexibility of our scheduling usually allowed for a return visit or provisions were made to mail data or collect it over the telephone at a later time.

There were three RMC analysts involved in site visiting. The few problems encountered were discussed among them and acceptable alternatives were always worked out.

We attribute the success of our data collection effort to four factors:

- On-site data collection
- Well-designed data collection tools
- Use of project cost analysts as on-site data collectors
- Total cooperation of PIP staff members and school officials.

IV DATA ANALYSIS AND RESULTS

The development of a cost analysis methodology for this study required a relatively large effort since most of RMC's previous cost analysis work was performed on a total compensatory reading curriculum rather than on small self-contained projects. All costs are in terms of 1974 dollars; if accurate projections of future costs are to be made, all costs should be multiplied by the appropriate inflation factors.

The data analyses presented in this chapter include:

- A comparison of costs within PIP programs (total, standardized).
- A comparison of costs across PIP programs (total, standardized).
- A comparison of the distribution of costs by resource category within PIP programs (total, standardized).
- A comparison of the distribution of costs by resource category across PIP programs (total, standardized).
- The development of implementation planning factors for each PIP program for first-year costs and annual recurring costs (incremental, standardized).

Data Reduction

Once the site-visit work had been completed, data were extracted from survey instruments and from other information collected at each site. For each project, we made resource worksheets listing all utilized resources; for each of these resources, we recorded the quantities used, the quantities purchased, the unit cost, and the unit life. Using this information, we calculated an availability, dedication, or utilization factor (depending on the methodology for each resource type discussed in Chapter III). The development of these resource worksheets was the first step in the application of the resource cost model. The worksheets contained the model inputs N, P, and C for each resource item.

The identification of the quantity of each resource type was not difficult, but the calculation of P for each resource type was complex and, in some cases, the application of the methodology presented in Chapter III required call-backs to the project directors. In addition, the calculation of standardized costs for each resource item had to be conducted. This process, a small study in itself, had to be completed before unit costs could be entered onto the resource worksheets.

Once the data had been reduced and N, P, and C had been calculated for each resource item, the model outputs were completed for each project. This was a relatively easy task compared with the development of the resource worksheets. In general terms, the production of these outputs involved multiplying N, P, and C for each resource type and then calculating subtotals under each resource category for each type of cost (capital investment, annual operating, and the like) presented in the output tables. The results of these analyses are presented in Appendices A and C. Appendix A contains the total costs for each project site and Appendix C contains the actual implementation costs for each project site. In this chapter we summarize the information contained in the tables found in the two appendices and discuss the limitations and uses of the information presented.

Comparison of Costs

Costs Within PIP Programs

Comparison of costs within PIP programs (e.g., Catch-Up) used standardized costs to eliminate biases contained in actual costs caused by local and regional variations in the price of most resources.

Table 7 presents the total annualized costs[*] per student and the total annualized costs per student hour of instruction for each project site visited. Costs per student and costs per student hour of instruction are simply two different ways of normalizing comparison measures across projects. The commonly used cost-per-student measure involves adjusting total annualized project costs to correct for the number of students or size of the project. Since the PIP programs vary in the amount of time the student is actually exposed to the project, the cost-per-student-hour-of-instruction measure provides another perspective on costs. It adjusts the total annualized project costs for the amount of time each student spent in the instructional phase of the project.

An investigation of the variability of costs per student within each PIP program showed that R-3 and Conquest projects had high standard deviations with respect to their means, and IRIT and PTR projects had low standard deviations with respect to their means. The variability in costs per student hour of instruction was highest across Catch-Up projects and relatively low for IRIT and PTR projects with respect to their mean values. The primary reason for the variability within PIP types is the variation in the sizes of the project sites. That is, economies of scale were present as, for example, when the project director's salary was prorated over a large number of students.

Comparison of Costs Across PIP Programs

Comparison of costs across PIP programs also used standardized costs to eliminate biases introduced into comparison measures as a result of local and regional fluctuations in the costs of resources. Table 8 compares costs across PIP programs by presenting the total annualized costs

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[*] See pages 6-8 and 17 of this volume for definitions.

Table 7

COMPARISON OF TOTAL STANDARDIZED COSTS WITHIN PIP PROGRAMS

Project Location	Total Annualized Cost Per Student	Total Annualized Cost Per Student Hour of Instruction
Catch-Up		
Site 1	540	5.82
Site 2	627	3.58
Site 3	744	8.27
Site 4	682	5.68
Site 5	899	6.61
Conquest		
Site 1	983	6.21
Site 2	531	4.30
Site 3	882	5.06
HIT		
Site 1	378	5.09
Site 2	511	3.74
IRIT		
Site 1	654	4.36
Site 2	731	4.81
Site 3	553	4.19
PTR		
Site 1	537	11.94
Site 2	433	13.35
R-3		
Site 1	670	1.65
Site 2	1,074	1.99
Site 3	675	1.48
Site 4	1,129	2.04

Table 8

COMPARISON OF TOTAL STANDARDIZED COSTS ACROSS PIP PROGRAMS[*]

PIP Program	Total Annualized Cost Per Student	Total Annualized Cost Per Student Hour of Instruction
Catch-Up	647	5.63
Conquest	729	4.94
HIT	441	4.25
IRIT	642	4.46
PTR	468	12.77
R-3	817	1.74

[*] The more commonly used implementation (incremental) costs are given in Table 12.

per student and total annualized costs per student hour. The figures shown are weighted with respect to the number of individuals participating in the projects.[*] The table reveals that R-3 sites used the most resources per student. This is reflected in the mean total annualized costs per student of $817. The tutoring programs (HIT and PTR) consumed the least amount of resources per student. This is reflected in their respective mean cost per student of $441 and $468. HIT and PTR programs do not require a great deal of start-up costs (see Appendix B).

Costs per student hour of instruction across PIP programs showed a great deal of variation. Catch-Up, Conquest, HIT, and IRIT programs all cost between $4 and $6 per student hour of instruction. However, the cost per student hour of instruction for PTR was $12.77. For R-3 this figure was only $1.74. This variation is quite striking and is a reflection of the level of intensity of instruction. The PTR program has a 1:1 student-to-teacher ratio, while the R-3 program may have a ratio nearly 20:1. The relationship between costs per student and costs per student hour of instruction is completely reversed for the PTR and R-3 programs. This reversal is again primarily caused by the level of intensity of the instruction.

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[*] Costs were summed over all projects with a specific PIP program. This sum was divided by the total number of students within these projects of the same type.

We present costs in the cost model output formats in terms of per student costs and per student hour of instruction costs so that analysts can make comparisons across projects more easily. Obviously, comparing the total costs of one project with the total costs of another is not useful unless one also considers the number of participants and the amount of instruction that each participant receives. Cost per student is very useful when effectiveness is known since it allows the analyst to identify those projects providing more output for each dollar spent. Cost per student hour of instruction, on the other hand, is more useful as a tool for studying the intensity of instruction. Additional measures can, of course, be developed, but we feel that the two presented here are the most useful at this stage in the development of the PIPs.

Distribution of Costs Within PIP Type

Comparing the distribution of costs across resource categories within PIP programs can be a useful indicator of project replication. Consistency across sites within a PIP program is an indication of consistency in implementation, while large differences imply variation in the ways in which PIPs were implemented. The distribution of total annualized costs was used for comparison purposes; since these costs are standardized, they eliminate local and regional variations in the costs of resources. Table 9 presents the percentage of distribution of total annualized costs across resource categories for each project site visited.

Table 9

COMPARISON OF THE PERCENTAGE DISTRIBUTION OF TOTAL STANDARDIZED COSTS WITHIN PIP PROGRAMS

Project Location	Staff	Facilities	Equipment	Materials	Transportation	Technical Assistance	Public Relations
Catch-Up							
Site 1	71.2	16.8	2.9	8.1	0.1	0.1	0.8
Site 2	79.2	13.3	2.7	3.0	1.8	0.0	0.0
Site 3	83.2	8.7	0.8	5.3	2.0	0.0	0.0
Site 4	71.9	7.8	1.8	15.9	0.7	1.9	0.0
Site 5	75.0	13.7	2.6	5.8	2.6	0.3	0.0
Conquest							
Site 1	77.8	12.2	1.6	6.8	0.3	0.2	1.1
Site 2	81.6	11.6	0.7	5.6	0.4	0.1	0.0
Site 3	84.2	11.3	1.4	2.4	0.7	0.0	0.0
HIT							
Site 1	74.5	16.5	0.2	6.9	1.9	0.0	0.0
Site 2	75.0	16.7	0.2	7.2	0.2	0.7	0.0
IRIT							
Site 1	73.4	18.7	2.8	3.8	1.3	0.0	0.0
Site 2	67.1	21.0	4.1	7.5	0.3	0.0	0.0
Site 3	67.6	18.4	3.5	5.8	4.7	0.0	0.0
PTR							
Site 1	84.1	13.6	0.7	1.6	0.0	0.0	0.0
Site 2	69.6	29.4	0.3	0.5	0.2	0.0	0.0
R-3							
Site 1	66.9	27.6	1.2	3.3	1.0	0.0	0.0
Site 2	64.2	15.7	1.1	8.1	6.6	3.6	0.7
Site 3	72.3	17.2	1.4	2.6	5.2	0.8	0.5
Site 4	71.2	24.1	2.0	1.0	1.7	0.0	0.0

When the table is scanned, it becomes immediately apparent that large differences within PIP programs are not present. Catch-Up, PTR, and R-3 sites show slightly more variation in the cost distributions across sites than Conquest, HIT, and IRIT. The distribution across categories for the two HIT projects is surprisingly similar. In the case of the PTR sites, the differences in staff and facilities proportions of total costs are probably the result of the way in which space was allocated. Larger amounts of space were available and utilized in PTR 2. The project therefore probably occupied more space than was required to conduct instruction. In a practical sense, these figures may be a slight overstatement of the actual differences.

Distribution of Costs Across PIP Programs

Comparison of the distribution of resource costs across PIP programs should be made using total annualized costs. Investigating these distributions provides the reader with a picture of the variability in resource utilization across PIP programs. Table 10 presents the percentage distribution of total annualized costs for each major resource category at each PIP program. Differences in project sizes are reflected in the calculation of these percentages. It is clear from this analysis that Conquest project sites were more staff intensive and used fewer facilities than other types of PIPs. IRIT and R-3 project sites spent smaller proportions of their budgets on staff. PTR project sites used more facilities with respect to other resources than other PIP programs. IRIT project sites need a larger proportion of equipment resources than other PIPs. HIT and PTR used a minimal level of equipment resources. PTR project sites used fewer materials than other programs, while Catch-Up and HIT used more materials than the average. R-3 project sites used more transportation resources and also spent more on technical assistance. The differences in these distributions across PIP programs

Table 10

COMPARISON OF THE DISTRIBUTION OF TOTAL STANDARDIZED COSTS ACROSS PIP PROGRAMS

PIP Program	Staff	Facilities	Equipment	Materials	Transportation	Technical Assistance	Public Relations
Catch-Up	75.0	13.1	2.3	7.7	1.2	0.4	0.3
Conquest	82.0	11.6	1.2	4.4	0.5	0.1	0.2
HIT	74.8	16.6	0.2	7.1	0.9	0.4	0.0
IRIT	69.5	19.4	3.5	5.7	1.9	0.0	0.0
PTR	75.2	23.3	0.4	1.0	0.1	0.0	0.0
R-3	69.2	21.8	1.5	3.2	3.3	0.8	0.2

are closely related to the differences in instructional approach or technique; they are a general indicator of appropriate project implementation since distributions correspond with PIP specifications.

Standardized Costs of Implementation

The results of this study can be used for planning the implementation of new projects or for continuing currently existing projects. To provide useful planning factors for the cost of PIP programs, we conducted an analysis of total costs (see Appendix A) and actual implementation costs (see Appendix C). The objective of this analysis was to produce standardized estimates of the costs that LEAs and the Office of Education would have to bear if projects similar to the ones in this study were to be implemented in the future under funding conditions similar to those used for the implementation of the projects in this study.

These standardized implementation costs were developed using the methodology shown in Table 11. The table identifies the kinds of costs included under each major resource category for first-year costs and annual recurring costs. This table was produced under the following assumptions:

- Funding of staff would follow restrictions similar to those placed on the project grants for 1974-75 (e.g., R-3 staff would have to be partially provided by the LEA).
- All space would be provided by the LEAs.
- Funding for furniture and fixtures not made available by the LEAs would be provided.
- Funding for the purchase and operation and maintenance of equipment used exclusively by the project would be provided.
- The cost of all materials, transportation, technical assistance, and public relations required for the projects would be funded by the Office of Education.

These assumptions are based on RMC's knowledge of what the Office of Education funded during the 1974-75 school year and, in some instances, on costs that seemed fair and reasonable in view of the burden to the LEAs.

Table 11

METHODOLOGY FOR DEVELOPING STANDARDIZED IMPLEMENTATION COSTS

Resource Category	First-Year Costs	Annual Recurring Costs
Staff	OE-funded staff total annualized	OE-funded staff total annualized
Furniture	purchased furniture and fixtures capital investment	furniture and fixtures total annualized
Equipment	purchased exclusive equipment capital investment plus all exclusive equipment annual operating	exclusive equipment total annualized
Materials	capital investment plus annual operating	materials total annualized
Transportation	annual operating	total annualized
Technical Assistance	annual operating	total annualized
Public Relations	annual operating	total annualized
Total	sum of above	sum of above

These estimates include only the resources used in the project and the direct support costs to the projects. In some instances, budget line items included costs for indirect expenditures. These costs are not reflected in the planning factors presented because, in general, they should not require any significant increase over and above what is already required for the activities taking place in the district.

Table 12 summarizes the results of the implementation of the methodology described above. Appendix B contains the data on which Table 12 was based. Planning factors are presented in terms of total costs per student. They are averages of costs across all project sites and take

Table 12

STANDARDIZED IMPLEMENTATION (INCREMENTAL) COSTS OF PIP PROGRAMS

PIP Program	First Year Total Cost/Student	Annual Recurring Total Cost/Student	Start-Up Total Cost/Student
Catch-Up	693	566	127
Conquest	657	578	79
HIT	409	372	37
IRIT	621	523	98
PTR	365	364	1
R-3*	371	333	38

*The data collected at R-3 (2) were excluded when calculating standardized implementation costs. The policy for calculating teachers' salaries at R-3 (2) differed from that at other R-3 sites; data use, in this instance, was therefore improper.

project size into consideration. In addition to containing costs per student, Appendix B also gives costs per lab at Catch-Up sites, costs per center at HIT sites, costs per team at IRIT sites, and costs per teacher at R-3 sites. Conquest projects were set up in clinics or reading rooms. However, the information gathered made it impossible to relate the three Conquest projects to design specifications. Therefore, planning factors are presented only in terms of costs per student. The data on R-3 projects exclude information collected at the R-3 (2) project site. R-3 (2) was excluded because the Office of Education funded the entire project staff at this site, which was a deviation from their policy at other R-3 sites.

The figures in Table 12 were calculated using data from a very small number of sites and, even within project sites, the figures were subject to wide variation. Nevertheless, the data presented are interesting from a comparative standpoint. HIT, PTR, and R-3 projects are relatively inexpensive per student when compared with Catch-Up, Conquest, and IRIT projects. This is true for both first-year costs and annual recurring costs. It is also interesting to compare first-year costs and annual recurring costs for each PIP program. The difference in these two costs could be defined as start-up costs. Catch-Up appears to have the highest start-up cost, $127 per student, and PTR the lowest, only an average of $1 per student.

Economies of Scale

In some of the analyses presented earlier in this chapter, we used economies of scale to explain the variability in costs across sites within PIP programs. Economies of scale are present when it can be demonstrated that costs per student (students are a measure of the project size) decrease as the size of the project increases. A formal analysis could not be undertaken to demonstrate this fact for the PIP projects since so few data points were available (two for HIT and PTR, three for Conquest and IRIT, four for R-3, and five for Catch-Up). It is generally true, however, that as the number of students increases, the costs per student decrease for each of the PIP programs studied. This phenomenon implies that, if project effectiveness is relatively constant, larger projects are more desirable since total project effectiveness increases.

The reasons for the presence of economies of scale are obvious in most cases. The costs of project directors and administrative staff tend to be spread over more students, thereby decreasing the cost per student. The same situation exists with respect to the cost of technical assistance. To a lesser extent, economies of scale are present because of higher utilization of resources in the categories under facilities, equipment, and transportation.

If additional projects are funded in the future and choices must be made between funding one large or two small projects, the most efficient use of funds can be obtained by funding the larger project. This statement assumes that project characteristics other than size are relatively equal.

Limitations of Data and Results

The results are useful if they are viewed in the correct context. However, the ways in which data can be interpreted are limited. We list below the appropriate restraints that should be considered when using the results from the analyses described to this point:

- The results are based on the resources used in the 19 field-test projects and the direct support costs to these projects, and should not be used in a broader context.
- The cost figures are based on 1974 dollars, and if used for projection purposes, should be appropriately adjusted.
- If errors exist in the cost estimates, they are most likely underestimates. (While every effort was made to identify every resource used at each project site, it was inevitable that a few resources went unnoticed.)
- The cost estimates presented are accurate representations for the projects from which the data were collected, but should be used with caution with respect to PIPs in general. (This is required since the field-test sites used as data sources comprised a very small sample.)
- The variation around the cost estimates presented is not well known, but certainly does exist owing to effects of economies of scale and variations in the ways in which the projects were replicated.
- Cost estimates of facilities and equipment were often based on the dedication of the resource to the project rather than its actual utilization; therefore, these estimates may be higher than PIPs actually require.

- Actual costs (costs presented in Appendix C) should be used only at the project level and never for comparison across projects. (Because of local and regional fluctuations in actual costs, these costs cannot be used for comparison purposes.)

Utilization of Results

The results presented so far have been limited to a summarization of total costs and the distribution of total costs. The great amount of data displayed in Appendices A, B, and C shows that the analyses presented here have only scratched the surface of the ways in which the data can be used.

Total Costs: Standardized[*]

Total costs, as presented in Appendix A, are used primarily for evaluation purposes. They would, for example, be appropriate statistics for entering into cost-effectiveness ratios to determine which projects produce greater output for dollars spent. Total costs reflect all resources used by the project and the direct support costs to the project regardless of whether the project budget paid for the resources or not. Therefore, it is important that the user of this information does not use total costs as factors for budget planning. This use would result in much larger budgets than would actually be required. Capital investment costs within the total costs output format are a reflection of the expenditures that would be required for the project to be built from the ground up and before the first day of instruction could take place. Some of these costs are not a reflection of reality and should not be used as such. They are simply a measure of the total amount of resources required before a project can begin.

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[*] See definitions of terms, pages 6-8 of this volume.

Annual operating costs within the total cost output format reflect costs that are required on a year-to-year basis. These costs are the minimum required if one were to assume that all capital resources never required replacement. Annual operating costs are not, however, a reflection of what might be required in a project budget, because PIP projects are often not charged for the maintenance of space and equipment. Use of annual operating cost figures should be limited to the comparison of what is required across projects rather than what is actually spent. Total annualized costs within the total cost output format are a reflection of what would be required on a year-to-year basis if all costs (capital and annual operating) were spread equally over the life of a project assuming the project would last indefinitely. Total annualized costs are a valuable tool for comparison across projects since they tend to measure the projects on an equal basis. They should not be used, however, for the purposes of planning since they are not a measure of what was actually spent.

Implementation (Incremental) Costs: Standardized

The tables in Appendix B represent an estimate for each PIP program of the costs an LEA could expect to incur in implementing a project. These costs are primarily useful as a planning tool and should not be used for comparison purposes across projects. They are a representation of the costs of projects in districts similar to the field-test sites. Intelligent use of these figures requires that the user be familiar with the projects implemented during the 1974-75 school year since the costs from which these figures were derived were subject to wide variation. Such characteristics of field-test sites as size, geographic location, and implementation procedures can affect actual costs and should be taken into consideration when using the costs presented in Appendix B.*

These costs were calculated by summing costs over all projects of a specific PIP program and then dividing this sum by the total number of students in all projects of the same type. These numbers are therefore weighted averages based on the number of students in the projects. A similar technique was used to calculate per lab costs for Catch-Up sites, per center costs for HIT sites, per team costs for IRIT sites, and per teacher costs for R-3 sites.

Implementation (Incremental) Costs: Actual

The tables presented in Appendix C are accurate representations of direct expenditures from each of the project budgets. While the data in these tables are highly relevant to each specific project site, they should not be used for comparative purposes across projects or for the planning of future projects. The information contained in these tables was often the basis for developing standardized costs and can be useful for analysis at the local level. However, the most useful application of actual costs at the national level is to compare them with total annualized costs and standardized implementation costs. These comparisons will provide the reader with more thorough insight into the differences of standardized costs and actual costs. For example, facilities space costs are generally insignificant under the actual cost output format, but, under the total cost output format, these costs represent between

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*Actual costs vary widely depending on local costs and available resources. Budgeting worksheets are available from USOE's Office of Planning, Budgeting, and Evaluation for LEAs wishing to cost a specific project.

10 and 20 percent of the grand total. The differences between actual implementation costs and standardized implementation costs are generally a reflection of variations in project size, local and regional costs, and the way in which the projects were implemented.

Supplementary Information

While Table 12 permits a meaningful comparison among project costs as implemented in the field-test sites, the reader may wish to compare costs of PIP projects with exemplary projects being disseminated by USOE under other auspices. The cost figures from the field-test sites may be confusing in this respect for two reasons.

First, project directors' salaries, as well as other project-related items which are often provided out of other-than-project funds, were charged directly to project budgets in the field-test sites. Of course, the purpose of the grants was to ensure that sites with the need and interest could implement the projects as described in the PIPs. This was a necessary funding approach in a situation where districts were requested to act as tryout sites for untested packages. In fact, it appears that without such grants some of the sites would have been unable to afford the costs in question. However, project directors' salaries are not commonly reflected in project costs when they are being described to potential adopter LEAs.

Second, the project configurations at the field-test sites were influenced by the total amount of funds made available by USOE and the size of the sites. Thus more than the minimum staff time, materials, and the like was utilized. To provide information useful to USOE and future applicants for PIP projects, a supplementary analysis of incremental costs for the basic project budget items was undertaken. This analysis is summarized in Table 13.

Table 13

IMPLEMENTATION (INCREMENTAL) COSTS
Basic Project Costs (Staff, Materials/Equipment)
Excluding Project Director

	Total	Per Student
Catch-Up (one lab: 64 students)		
1. Staff (annual) (2/3) ($13,000) + (4/3) ($11,000) + (2/3) ($3,700) =	$ 25,929	$405
2. Materials/equipment (first year only)	6,500	(102)
3. Materials/equipment (subsequent annual cost)	1,200	19
Conquest (combined reading room/clinic. 80 students)		
1. Staff (annual) (1) ($13,000) + (2) ($11,000) + (1) ($3,700) + (0.5) ($6,000)	$ 41,700	$521
2. Materials/equipment (first year only)	8,000	(100)
3. Materials/equipment (subsequent annual cost)	2,000	25
IRIT (one team: 135 students)		
1. Staff (1) ($13,000) + (2) ($11,000) + (1) ($6,600)	$ 41,600	$308
2. Materials/equipment (first year only)	7,500	(56)
3. Materials/equipment (subsequent annual cost)	1,500	11
HIT (one center: 60 tutees; 80 tutors[†])		
1. Staff (1) ($13,000) + (2) ($3,700)	$ 20,400	$146
2. Materials/equipment (first year only)	500	(4)
3. Materials/equipment (subsequent annual cost)	200	1
PTR (one tutorial supervisor; 30 tutors; 450 students)		
1. Staff (1) ($13,000) + (30) ($3,700)	$124,000	$176
2. Materials/equipment (first year only)	1,260	(3)
3. Materials/equipment (subsequent annual cost) 25% of first year costs	315	1
R-3 (five class periods per day, three subject areas, six original teachers no cost to project; one curriculm resource teacher; three cadre teachers, nine aides: 330 students)		
1. Staff (1) ($13,000) + (3) ($11,000) + (9) ($3,700)	$ 79,300	$240
2. Materials/equipment first three years (to equip three grades: @ $5,800); field trips ($10,000); facilities ($6,000)	21,800	(66)[*]
3. Materials/equipment (subsequent annual cost) ($1,500) + field trips ($10,000)	11,500	35

[*] First three years.

[†] In the HIT project, staff feel that tutors benefit as much as tutees, however the main analysis reported in this volume does not count tutors as students.

Table 13 includes only those cost items most commonly charged as direct project costs. Caution must be exercised in using these standardized cost figures for local planning since the major cost items, teacher salaries, may be completely unrealistic by local standards. Only two levels of teachers are assumed in Table 13 with salaries (including benefits) of $13,000 and $11,000, respectively. In addition, the cost categories included in Table 13 are very different from those in the main analyses:

- Staff: Project directors not included.
- Facilities: No room or furniture costs included.
- Equipment: Reduced to minimum (to be recommended in revised PIPs).
- Materials: Reduced to minimum (to be recommended in revised PIPs).
- Transportation: None included (except R-3).
- Technical Assistance: No funds included.
- Public Relations: No funds included.

While Table 13 provides a comparison of costs per student, for a year, it should be kept in mind that the intensity of the projects varies considerably. Table 14 analyzes the projects in terms of the cost per student for one hour of instruction. Even this figure must be carefully interpreted since in one project students spend their hour with 14 other students sharing a single teacher's attention, while in other projects each student has the undivided attention of a tutor.

Table 15 gives the hypothetical cost of an hour of undivided teacher's attention in each project. It will be noted that the relative costs of the projects are reversed when viewed in this way. However, like all cost figures, those in Table 15 must be interpreted with great care. It is quite possible, for example, that a student learns as much in one hour of IRIT instruction as he or she would in an hour of tutoring, even though in IRIT there are 15 students in the room at one time. In fact, all of the nontutoring projects are carefully designed to ensure that the learning situation is as individualized as possible.

Table 14

DOLLARS PER HOUR STUDENT IS IN PROJECT
Cost Per Student Hour

	Days Attended	Hours per Day	Hours per Year	First-Year Cost	Subsequent Year's Cost
Catch-Up	180	0.5	90	$\frac{507}{90} = \$5.60$	$\frac{424}{90} = \$4.70$
Conquest	180	0.83	150	$\frac{621}{150} = \$4.14$	$\frac{546}{150} = \$3.64$
HIT	180	0.83	150	$\frac{150}{150} = \$1.00$	$\frac{147}{150} = \$0.98$
IRIT	55	3.0	165	$\frac{364}{165} = \$2.21$	$\frac{319}{165} = \$1.93$
PTR	180	0.25	45	$\frac{297}{45} = \$6.19$	$\frac{277}{45} = \$6.15$
R-3	180	2.5	448	$\frac{306}{448} = \$0.68$	$\frac{275}{448} = \$0.61$

Table 15

DOLLARS PER HOUR STUDENT HAS TEACHER'S UNDIVIDED ATTENTION

	Student per Teacher	First-Year Cost	Subsequent Year's Cost
Catch-Up	2.25	$12.60	$10.58
Conquest	6	24.84	21.84
HIT*			
Teacher	12	12.00	11.76
Tutor	1	1.00	0.98
IRIT	15	33.15	28.75
PTR	1	6.19	6.15
R-3	22	14.96	13.42

*Costs for HIT have been calculated in two ways. The first way employs the ratio of student tutees to the teacher in the HIT Center. The second way employs the student tutor/student tutee ratio.

V BUDGETING WORKSHEETS

This chapter consists of a sample set of budgeting worksheets (for Project Catch-Up). Similar worksheets are in preparation by RMC for the remaining five projects. The purpose of the worksheets is to enable LEA officials to prepare an accurate estimate of the funds needed to implement a particular PIP project in their districts. Unlike the preceding chapters of this report, which focused on the "real" costs of the projects in the 19 tryout sites, the budgeting worksheets are intended to help the planner in identifying the available resources which can be used "free" by the project and determining the amount of additional money needed to operate the project effectively.

The budgeting worksheets do not include descriptions of the projects or the resources required and, thus, cannot stand alone. They must be used in conjunction with the appropriate Project Description Booklet from the revised PIP Analysis and Selection Kit (ASK).

School districts vary widely in the items which are charged directly to a project. Personnel, classroom and office space, supplies, equipment, and maintenance may or may not be project budget items depending on local policies. For this reason, the budgeting worksheets include a column for amounts charged to the project budget as well as for total project requirements.

The Project Catch-Up start-up period begins in March in order to have the project operational when school starts in the fall. The major start-up costs are salaries for personnel involved in preparation and planning, teacher's salaries for a two-week summer workshop, and preparing/equipping the project laboratories. Some districts must also purchase or rent extra classroom space to house Project Catch-Up laboratories.

PROJECT CATCH-UP
BUDGETING WORKSHEETS

The purpose of the budgeting worksheets is to aid you in estimating the resources and related budget needed to implement Project Catch-Up in your school district. The worksheets are intended to be adapted to local budgeting procedures, and the instructions assume that a district official knowledgable in these procedures is involved in the budgeting process.

A detailed project description booklet for Project Catch-Up is included. The booklet should be used in conjunction with the worksheets to provide information on the resources required for the project. The basic resource categories used in these worksheets are:

Staff: Any individual who makes a direct contribution to the attainment of the objectives of the PIP project. Staff salaries and related costs account for about 70% to 80% of the first-year budgets for the six PIP projects.

Furniture and Fixtures: Furniture required in a classroom, office, auditorium, or other area for the implementation of the project curriculum.

Equipment: Any audiovisual resources or other equipment used by the project for participant instruction or project administration.

Materials: Books, instructional games, kits, programmed materials, films, tapes, records, etc.

Transportation Cost: Any costs incurred as a result of transporting PIP staff or project participants to and from instructional periods, transporting staff for the purposes of project administration (including out-of-town travel and per diem), and all costs associated with field trips (if any) for project participants.

Technical Assistance: Any assistance or advice received in implementing the PIP project, selecting project personnel, training staff and personnel, or evaluating the impact and effectiveness of the project.

Public Relations: Any resources used for developing understanding and good will between the PIP project and the general public (usually parents of project participants).

There are two sets of cost factors for Project Catch-Up: (a) first-year costs and (b) subsequent annual costs. The first-year costs consist of start-up costs plus operating costs for the first year of project operations. The start-up costs include first-time expenditures to get the project underway, such as purchases of new equipment, materials, and furniture. The subsequent annual costs are the regular operating costs, that is, recurring expenditures for staff salaries, consumable materials, transportation, and equipment replacement and maintenance.

School districts vary widely in the items which are charged directly to a project. Personnel, classroom and office space, supplies, equipment, and maintenance may or may not be project budget items depending on local policies. For this reason, the budgeting worksheets include a column for amounts charged to the project budget as well as for total project requirements.

The Project Catch-Up start-up period begins in March in order to have the project operational when school starts in the fall. The major start-up costs are salaries for personnel involved in preparation and planning, teacher's salaries for a two-week summer workshop, and preparing/equipping the project laboratories. Some districts must also purchase or rent extra classroom space to house Project Catch-Up laboratories.

Date ______________________

Proposed Budget for the ______________________________ School District

Implementation of Project Catch-Up

We propose to implement Project Catch-Up with the following organizations for the school year 19__ - 19__:

Laboratory	School (if known)	Number of Teachers	Number of Instructional Aides	Number of Students
1				
2				
3				
4				

Staff Costs (Worksheet 1):

The Project Catch-Up project description booklet (enclosed) describes staff requirements under the headings of "Organization" and "Personnel." Number of staff required (column 1) and proportion of time (column 2) are explained under "Organization." In the original Project Catch-Up site, lead teachers, teachers, and aides are paid on an hourly basis, four hours per day. The project director is the director of federal projects and is not paid from Project Catch-Up funds. Local salaries and benefits (column 3) should be determined after studying the personnel qualifications described in the booklet under "Personnel."

If the project director, secretary, or other personnel who contribute to the project are not to be paid out of project funds, note these "free" cases on Worksheet 1, and enter zero in Column 4.

Cost to Project (column 4) = (column 1) x (column 2) x (column 3)

The Project Catch-Up project director and certain other staff members begin planning and preparation as early as March. Any charges to the project should be entered at the bottom of Worksheet 1.

Worksheet 1
Project Catch-Up Staff

Annual Operating Costs

Staff Category and Proportion of Time Required by Project	(1) Number Required	(2) Proportion of Time Charged to Project	(3) Annual Salary (Including Benefits)	(4) Cost to Project
1. Project Director (1/2 time)				
2. Lead Teacher (2/3 time)				
3. Teacher (2/3 time)				
4. Aide (2/3 time)				
5. Secretary *				
6. Clerk *				
7. Custodian *				
8. Other *				
9. Total Annual Cost				

Additional Start-up Costs

10. Project Director (1/2 time) March-August**	
11. Lead Teacher (2/3 time) August**	
12. Teachers (2/3 time) two weeks in August**	
13. Aide (2/3 time) two weeks in August**	
14. Secretary *	
15. Clerk *	
16. Custodian *	
17. Other *	
18. Total Additional Start-up Cost	
19. Total Start-up/First-year Cost (line 9 + line 18)	

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* Depends on local needs or requirements.

**Assumes school starts about September 1. Adjust to suit local start date.

Facilities (Worksheet 2):

Requirements for facilities are described in the project description booklet. Facilities include instructional space, office space, and the associated furniture and fixtures.

In many districts, office and classroom space is not charged directly to the project. Exceptions may occur where classroom space must be purchased or constructed, or where vacated buildings are reactivated specifically for project use. Operating expenses (utilities, custodial service, etc.) may or may not be charged. Space requirements must be determined and budgeted according to local needs and availability. Furniture is also available from district supplies in many cases at no direct cost to the project. Major cost items (buildings) are usually amortized over many years. Furniture is figured as a start-up cost in some districts and amortized in others.

Column 1: Recommended number of units per lab (except project director's office, one of which is required for the entire project).

Column 2: Enter the number of labs times the actual number of units per lab. (Local considerations may make the actual number different from the recommended number per lab.)

Column 3: Standard items are frequently available from district supplies at no cost to the project. Enter the number of "free" units here.

Column 4: (Column 2) - (Column 3).

Columns 5 and 6: Depending on district policy, items may either be purchased outright from first-year funds, amortized over the life of the item, or rented. Enter in column 5 the full price of items to be purchased outright. Enter in column 6 the annual cost for items which are amortized, rented, leased, etc. For all items, enter zero in the column which does not apply.

Column 7: Enter annual operating costs including replacement/repair according to district policy. Operating costs for rented items may be included in the rent. If so, enter zero.

Column 8: Add columns 5 and 7 for items to be purchased out of first-year funds. Add columns 6 and 7 for amortized or rented items.

Column 9: Add columns 6 and 7.

Worksheet 2
Project Catch-Up Facilities

Start-Up and Operating Costs

	(1) Recommended Number Per Lab	(2) Total Number for Project	(3) Number Available At No Cost	(4) Number to be Purchased/ Rented	(5) Outright Purchase Price Per Unit	(6) Amortized Cost/Annual Rent Per Unit	(7) Annual Operating Cost per Unit	(8) Total Start-up/ First-year Cost	(9) Subsequent Annual Cost
Space									
Classrooms	1								
Office (for project director)	1	1							
Classroom Furniture/Fixtures (including replacement/repair)									
Tables, large (round)	4								
Tables, small	6								
Chairs, student	20 assorted								
Chairs, adult	4								
Chairs, beanbag	1								
Cupboard, large	1								
Shelves, low	6 sets								
Bulletin boards	4								
Cushions, large (for floor)	2								
Rug, 4' x 6'	1								
File drawers	4								
Other (list other items to be purchased with project funds: blackboards, partitions, drapes, air conditioning, etc.)									
Office Furniture/Fixtures (including replacement/repair)									
Desks									
Chairs									
Shelves									
Other									

TOTALS ______ ______

Materials/Equipment

An initial materials/equipment budget of approximately $6500 is required to equip each Catch-Up laboratory. The subsequent annual cost is about $1200 per lab, plus the cost of rented or amortized items. The first-year budget for one lab is broken down roughly as follows:

PIP-specified equipment	$1140
PIP-specified materials	2360
Locally selected equipment/materials and consumable supplies	2200
Teacher-controlled budget	800
	$6500

Equipment (Worksheet 3):

Equipment requirements are somewhat flexible depending on funds available. Project Catch-Up teachers utilize a wide variety of equipment when it is available, but can teach successfully with fewer items where necessary.

Column 1: Recommended numbers of items. Minimum and maximum numbers are provided for some items. These figures may be treated as guidelines, and any number in between may be selected to suit local preferences and budgets.

Column 2: Enter the total number you decide to use in the project.

Column 3: Standard items are frequently available from district supplies at no cost to the project. Enter the number of "free" units here.

Column 4: (Column 2) - (Column 3).

Columns 5 and 6: Depending on district policy, items may either be purchased outright from first-year funds, amortized over the life of the item, or rented. Column 5 gives the approximate price per unit as of fall 1975. Enter in column 6 the annual cost for items which are amortized, rented, leased, etc. For all items, put an X in the column which does not apply. Parentheses indicate optional items not included in the $1140 budget.

Column 7: Enter annual operating costs (including routine maintenance) according to district policy. Operating costs for rented items may be included in the rent. If so, enter zero. Addition/replacement costs are included on Worksheet 4 with materials.

Column 8: Add columns 5 and 7 for items to be purchased out of first-year funds. Add columns 6 and 7 for amortized or rented items.

Column 9: Add columns 6 and 7.

Worksheet 3
Project Catch-Up Equipment

	(1) Recommended Number Per Lab	(2) Total Number for Project	(3) Number Available At No Cost	(4) Number to be Purchased/ Rented	(5) Outright Purchase Price Per Unit	(6) Amortized Cost/Annual Rent Per Unit	(7) Annual Operating Cost per Unit	(8) Total Start-up/ First-year Cost	(9) Subsequent Annual Cost
Primary typewriter	1				175				
Cassette recorder	1-3				45				
Record player	1-2				90				
Cassette/ filmstrip viewer	1				150				
Headsets	3				10				
Language Master or (Audiotronics)	1				250				
Calculator	0-3				20				
System 80	1-2				(510)	80			
Tutor Computer, or Mathiputer, or Adding machine	0-1				(1400) 300 (50)				
Other:									

TOTALS __________ __________

Materials (Worksheet 4):

The PIP lists specific items recommended for each lab. This worksheet indicates the materials categories and the approximate amount of money allocated to each. Any plans to reduce costs by using locally available materials or by reducing specific categories should be discussed first with the agency to which you are submitting the PIP application.

Column 1: Approximate number of units recommended for each lab.

Column 2: Approximate cost per lab (at 1975 prices) for the number of units recommended.

Column 3: In most cases, the total cost will simply be the cost per lab (Column 2) times the number of labs. Where changes are desired or "free" items are to be utilized, explain at the bottom of the worksheet.

It is recommended that approximately $2200 per lab be budgeted for items to be selected locally, additional copies of PIP specified materials, and consumable supplies. In addition, the yearly teacher-controlled budget provides each teacher with an average of $12.50 per student and encourages the teachers to purchase materials to meet the special needs of their students.

Subsequent annual costs are much lower than first-year costs since many of the materials/equipment items last for many years. Experience in existing Catch-Up sites is that an annual budget of $1200 per 64-student laboratory is adequate to cover materials/equipment needs, and is divided approximately as follows:

New Items
(3 teachers) x (18 students) x ($12.50) = 675
(1 aid) x (10 students) x ($12.50) = 125

Replacement and consumables = 400
Total = 1200

Worksheet 4
Project Catch-Up Materials

First Year Costs

PIP-specified Basic Core Materials	(1) Approximate Number per Lab	(2) Approximate Cost	(3) Total Cost to Project
Reading Kits Math Kits	2 kits 1 kit	500 for 3 kits	
Programmed reading and math materials	50 booklets with tests, response books, etc.	160	
Library Books	2 sets	200	
Book/tape/record/filmstrip combinations	50 units	500	
System 80 Kits	3 kits	400	
Games	20-40 games	150	
Tests		400	
Miscellaneous		50	

Total ____________

Items selected locally and consumable supplies (recommended $2200 per lab) = ____________

Teacher-controlled budget ($800 per lab) = ____________

Materials Total First Year Cost ____________

Materials/Equipment: Subsequent Annual Costs

Additions/replacement, plus consumable supplies ($1200 per lab) ____________

Total Costs (Worksheet 5):

Line 1 through line 4 are taken from the appropriate totals on Worksheets One through Four.

Transportation (Line 5): Project Catch-Up does not normally require transportation of students or staff as a regular part of the project. District policy should be followed in budgeting for project director travel, teacher travel to inservice training, or other standard items.

Technical Assistance (Line 6): There are no specific Project Catch-Up requirements for outside assistance in planning the project or training the staff. Assistance in project evaluation is suggested in the PIP. Assistance in any of these areas should be budgeted according to district policy.

Public Relations (Line 7): Enthusiastic support from parents is an important part of Project Catch-Up. The project hosts several open houses, spaghetti suppers, etc., during the year to encourage parent involvement and, where district policy requires, some funds should be available for this purpose. Other forms of publicity, including education fairs, may require special budgets in some districts. Existing Catch-Up projects have spent about $2 per student on public relations.

Subtotal (Line 8): Add lines one through seven.

Summer Experimentation (Line 9): Continued development and evaluation of new approaches is an important part of Project Catch-Up. A one-month summer session provides the means for trying out new ideas. Ten percent of the subtotal for annual costs (10% of line 7, column B) should be entered in line 8. The same number should be entered in both column A and column B.

Total (Line 10) = (Line 8) + (Line 9).

Worksheet 5

Project Catch-Up Total Costs

		A First Year Cost	B Subsequent Annual Cost
1.	Personnel		
2.	Facilities		
3.	Equipment		
4.	Materials		
5.	Transportation		
6.	Technical Assistance		
7.	Public Relations		
8.	Subtotal		
9.	Summer Experimentation		
10.	Total		

Appendix A

TOTAL COSTS: STANDARDIZED*

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[*] Definitions: pp. 6. ff.
Discussion: pp. 65 ff.

CATCH-UP

TOTAL COST

PIP Type: CATCH-UP PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	6.75		70,866	70,866	71.2
Project Director	.50		6,585	6,585	
Lead Teacher	1.50		20,142	20,142	
Teacher	3.00		33,590	33,590	
Aide	1.50		5,559	5,559	
Secretary	.75		4,990	4,990	
FACILITIES		144,587	6,075	16,708	16.8
Space		140,266	6,075	16,228	
Office	1(450)	23,378	1,013	2,705	
Instructional	3(2,250	116,888	5,062	13,523	
Furniture and Fixtures		4,321		480	
Standard		3,518		362	
Specialized		803		118	
EQUIPMENT		11,086	868	2,874	2.9
Exclusive Use		11,086	868	2,[illegible]74	
Office	1	470	24	[illegible]0	
Production	3	720	36	139	
Sound	30	1,806	227	620	
Projection	9	855	37	158	
Sound/Projection	5	785	148	388	
Photographic					
Special Reading	12	2,850	216	696	
Special Math	6	3,600	180	783	
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		25,438	544	8,074	8.1
Consumable			544	544	
Rewards					
Non-Consumable		25,438		7,530	
TRANSPORTATION			86	86	0.1
Field Trips					
Student					
Staff			86	86	
Local					
Out of Town			86	86	
TECHNICAL ASSISTANCE			100	100	0.1
PUBLIC RELATIONS			750	750	0.8
TOTAL COST		181,111	79,289	99,458	100.0
COST/STUDENT	184			$540	
COST/STUDENT HOUR OF INSTRUCTION	17,100			$5.82	

PIP Type: CATCH-UP PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	4.16		32,783	32,783	79.2
Project Director	.50		6,906	6,906	
Lead Teacher	.50		6,056	6,056	
Teacher	1.00		10,488	10,488	
Aide	.50		1,853	1,853	
High School Aide	.66		828	828	
Secretary	.50		3,326	3,326	
Bookkeeper	.50		3,326	3,326	
FACILITIES		46,964	4,936	5,493	13.3
Space		43,509	4,936	5,037	
Office	1(200)	7,788	338	902	
Instructional	3(688)	35,721	1,548	4,135	
Furniture and Fixtures		3,455		456	
Standard		2,335		236	
Specialized		1,120		220	
EQUIPMENT		4,360	314	1,129	2.7
Exclusive Use		4,360	314	1,129	
Office					
Production	2	705	35	183	
Sound	5	475	65	154	
Projection	5	565	62	155	
Sound/Projection	1	215	32	85	
Photographic					
Special Reading					
Special Math	5	2,400	120	552	
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		3,600	175	1,241	3.0
Consumable			175	175	
Rewards					
Non-Consumable		3,600		1,066	
TRANSPORTATION			750	750	1.8
Field Trips			150	150	
Student			600	600	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		54,924	38,958	41,396	100.0
COST/STUDENT	66			$627	
COST/STUDENT HOUR OF INSTRUCTION	11,570			$3.58	

PIP Type: CATCH-UP PIP Site: 3

Resources	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	3.84		33,430	33,430	83.2
Project Director	.39		5,325	5,325	
Lead Teacher	.81		8,834	8,834	
Teacher	1.50		13,896	13,896	
Aide	.75		2,780	2,780	
Secretary	.39		2,595	2,595	
FACILITIES		30,141	1,175	3,497	8.7
Space		27,128	1,175	3,138	
Office	2(770)	13,600	589	1,573	
Instructional	1(434)	13,528	586	1,565	
Furniture and Fixtures		3,013		359	
Standard		1,946		198	
Specialized		1,067		161	
EQUIPMENT		879	104	306	0.8
Exclusive Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
Shared Use		879	104	306	
Office	1	240	12	46	
Production	1	[illegible]	14	82	
Sound	4	147	18	49	
Projection	2	93	6	17	
Sound/Projection	1	120	18	77	
Photographic					
Special Reading					
Special Math	2		36	36	
MATERIALS		5,064	618	2,117	5.3
Consumable			618	618	
Rewards					
Non-Consumable		5,064		1,499	
TRANSPORTATION			818	818	2.0
Field Trips					
Student					
Staff			818	818	
Local					
Out of Town			818	818	
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		36,084	36,145	40,168	100.0
COST/STUDENT	54			$744	
COST/STUDENT HOUR OF INSTRUCTION	4,860			$8.27	

PIP Type: CATCH-UP PIP Site: 4

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	3.31		31,396	31,396	71.9
Project Director	.50		8,045	8,045	
Lead Teacher	.60		6,782	6,782	
Teacher	1.13		10,994	10,994	
Aide	.54		1,982	1,982	
Secretary	.54		3,593	3,593	
FACILITIES		29,384	1,200	3,398	7.8
Space		27,696	1,200	3,205	
Office	.50(100)	2,598	113	301	
Instructional	.61(792)	25,098	1,087	2,904	
Furniture and Fixtures		1,688		193	
Standard		1,087		108	
Specialized		601		85	
EQUIPMENT		3,015	202	799	1.8
Exclusive Use		2,935	197	782	
Office	1	210	11	62	
Production	2	425	21	76	
Sound	6	425	52	150	
Projection					
Sound/Projection					
Photographic					
Special Reading	2	425	40	120	
Special Math	4	1,450	73	374	
Shared Use		80	5	17	
Office					
Production					
Sound	3	11	2	3	
Projection	16	53	3	10	
Sound/Projection	3	15	1	3	
Photographic					
Special Reading					
Special Math					
MATERIALS		7,483	4,728	6,943	15.9
Consumable			4,728	4,728	
Rewards					
Non-Consumable		7,483		2,215	
TRANSPORTATION			300	300	0.7
Field Trips					
Student					
Staff			300	300	
Local					
Out of Town			300	300	
TECHNICAL ASSISTANCE			815	815	1.9
PUBLIC RELATIONS					
TOTAL COST		39,882	38,641	43,651	100.0
COST/STUDENT	64			$682	
COST/STUDENT HOUR OF INSTRUCTION	7,680			$5.68	

PIP Type: CATCH-UP PIP Site: 5

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	3.07		36,364	36,364	75.0
Project Director	.57		13,124	13,124	
Lead Teacher	.50		6,961	6,961	
Teacher	1.00		11,100	11,100	
Aide	.50		1,853	1,853	
Secretary	.50		3,326	3,326	
FACILITIES		57,028	2,376	6,656	13.7
Space		54,827	2,376	6,346	
Office	1(288)	7,476	324	865	
Instructional	1(912)	47,351	2,052	5,481	
Furniture and Fixtures		2,201		310	
Standard		1,249		125	
Specialized		952		185	
EQUIPMENT		5,217	357	1,273	2.6
Exclusive Use		5,095	348	1,235	
Office	2	680	34	152	
Production	3	720	36	139	
Sound	4	290	30	75	
Projection					
Sound/Projection	4	770	116	303	
Photographic					
Special Reading	1	235	12	45	
Special Math	4	2,400	120	521	
Shared Use		122	9	38	
Office					
Production	1	46	2	14	
Sound	2	50	6	19	
Projection	1	26	1	5	
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		8,654	287	2,839	5.8
Consumable			212	212	
Rewards			65	65	
Non-Consumable		8,654		2,562	
TRANSPORTATION			1,250	1,250	2.6
Field Trips					
Student					
Staff			1,250	1,250	
Local			1,250	1,250	
Out of Town					
TECHNICAL ASSISTANCE			150	150	0.3
PUBLIC RELATIONS					
TOTAL COST		70,899	40,784	48,532	100.0
COST/STUDENT	54			$899	
COST/STUDENT HOUR OF INSTRUCTION	7,345			$6.61	

CONQUEST

TOTAL COST

PIP Type: CONQUEST PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	10.95		107,227	107,227	77.8
Project Director	.95		15,824	15,824	
Supervisor Clinician	1.00		10,756	10,756	
Clinician	4.00		52,388	52,388	
Aide	3.00				
Secretary	1.00		6,653	6,653	
Counselor	1.00		10,488	10,488	
FACILITIES		146,402	6,065	16,851	12.2
Space		140,207	6,065	16,200	
Office	3(2,524)	28,753	1,238	3,306	
Instructional	1(500)	111,454	4,827	12,306	
Furniture and Fixtures		6,195		651	
Standard		4,737		475	
Specialized		1,458		176	
EQUIPMENT		13,689	801	2,147	1.6
Exclusive Use		12,416	718	1,806	
Office	1	470	24	90	
Production					
Sound	15	6,811	182	374	
Projection	15	1,260	70	244	
Sound/Projection					
Photographic					
Special Reading	17	3,875	292	943	
Special Math	5		150	150	
Shared Use		1,273	83	341	
Office					
Production	6	760	38	223	
Sound	32	138	21	40	
Projection	25	251	18	54	
Sound/Projection	4	124	6	24	
Photographic					
Special Reading					
Special Math					
MATERIALS		26,634	1,454	9,337	6.8
Consumable			1,454	1,454	
Rewards					
Non-Consumable		26,634		7,883	
TRANSPORTATION			360	360	0.3
Field Trips					
Student					
Staff			360	360	
Local			360	360	
Out of Town					
TECHNICAL ASSISTANCE			250	250	0.2
PUBLIC RELATIONS			1,500	1,500	1.1
TOTAL COST		186,725	117,657	137,672	100.0
COST/STUDENT	140			$983	
COST/STUDENT HOUR OF INSTRUCTION	22,167			$6.21	

PIP Type: CONQUEST PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	18.50		198,590	198,590	81.6
Project Director	1.00		19,890	19,890	
Supervisor Clinician	2.00		37,019	37,019	
Clinician	12.00		114,432	114,432	
Aide	1.50		5,559	5,559	
Clerk	1.00		6,653	6,653	
Counselor	1.00		15,037	15,037	
FACILITIES		245,850	9,922	28,201	11.6
Space		228,967	9,922	26,504	
Office	1(800)	41,536	1,800	4,808	
Instructional	6(3,610)	187,431	8,122	21,696	
Furniture and Fixtures		16,883		1,697	
Standard		9,301		947	
Specialized		7,582		750	
EQUIPMENT		4,693	793	1,765	0.7
Exclusive Use		4,595	788	1,736	
Office	1	470	24	90	
Production					
Sound	24	1,755	211	582	
Projection	9	225	34	66	
Sound/Projection					
Photographic					
Special Reading	9	2,145	279	758	
Special Math	8		240	240	
Shared Use		98	5	29	
Office					
Production	6	98	5	29	
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		36,324	2,756	13,508	5.6
Consumable			2,756	2,756	
Rewards					
Non-Consumable		36,324		10,752	
TRANSPORTATION			1,000	1,000	0.4
Field Trips					
Student					
Staff			1,000	1,000	
Local			1,000	1,000	
Out of Town					
TECHNICAL ASSISTANCE			270	270	0.1
PUBLIC RELATIONS					
TOTAL COST		286,867	213,331	243,334	100.0
COST/STUDENT	458			$531	
COST/STUDENT HOUR OF INSTRUCTION	56,538			$4.30	

PIP Type: CONQUEST PIP Site: 3

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	25.10		265,687	265,687	84.2
Project Director	.50		10,142	10,142	
Supervisor Clinician	2.00		32,368	32,368	
Reading Interns	6.00		55,584	55,584	
Clinician	8.00		113,869	113,869	
Aide	6.00		22,236	22,236	
Guidance Counselor	1.00		16,288	16,288	
Secretary	.60		3,992	3,992	
Guidance Intern	1.00		11,208	11,208	
FACILITIES		311,246	12,712	35,822	11.3
Space		293,497	12,712	33,954	
Office	6(1,068)	53,097	2,300	6,143	
Instructional	9(5,440)	240,400	10,412	27,811	
Furniture and Fixtures		17,749		1,868	
Standard		13,392		1,365	
Specialized		4,357		503	
EQUIPMENT		14,026	1,380	4,366	1.4
Exclusive Use		10,928	981	3,316	
Office	2	680	34	102	
Production					
Sound	36	2,720	323	868	
Projection	9	689	41	139	
Sound/Projection	8	523	78	461	
Photographic					
Special Reading	35	6,031	489	1,538	
Special Math	7	285	14	208	
Shared Use		3,098	399	1,050	
Office					
Production					
Sound	245	1,276	169	447	
Projection	177	585	39	122	
Sound/Projection	52	74	11	48	
Photographic					
Special Reading	19	1,163	145	398	
Special Math	2		35	35	
MATERIALS		12,334	3,820	7,471	2.4
Consumable			3,820	3,820	
Rewards			530	530	
Non-Consumable		12,334		3,651	
TRANSPORTATION			2,250	2,250	0.7
Field Trips					
Student					
Staff			2,250	2,250	
Local					
Out of Town					
TECHNICAL ASSISTANCE			50	50	0.0
PUBLIC RELATIONS					
TOTAL COST		337,606	285,899	315,646	100.0
COST/STUDENT	358			$882	
COST/STUDENT HOUR OF INSTRUCTION	62,441			$5.06	

HIT

TOTAL COST

PIP Type: HIT PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	9.14		63,359	63,359	74.5
Project Director	.07		1,229	1,229	
Reading Teacher	2.00		25,056	25,056	
Math Teacher	1.00		14,374	14,374	
Aide	6.00		22,234	22,234	
Secretary	.07		466	466	
FACILITIES		121,569	5,029	14,039	16.5
Space		116,041	5,029	13,433	
Office	2(375)	19,470	844	2,254	
Instructional	3(1,860)	96,571	4,185	11,179	
Furniture and Fixtures		5,528		606	
Standard		5,128		549	
Specialized		400		57	
EQUIPMENT		670	40	171	0.2
Exclusive Use		80		11	
Office					
Production					
Sound					
Projection	2	80		11	
Sound/Projection					
Photographic					
Special Reading					
Special Math					
Shared Use		590	40	160	
Office					
Production	8	294	15	86	
Sound	33	100	15	38	
Projection	69	188	10	36	
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		5,775	4,176	5,885	6.9
Consumable			3,248	3,248	
Rewards			928	928	
Non-Consumable		5,775		1,709	
TRANSPORTATION			1,578	1,578	1.9
Field Trips			1,368	1,368	
Student					
Staff			210	210	
Local			210	210	
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		128,014	74,182	85,032	100.0
COST/STUDENT	225*			$378	
COST/STUDENT HOUR OF INSTRUCTION	16,704*			$5.09	

* Tutees only.

PIP Type: HIT PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	12.20		77,503	77,503	75.0
Project Director	.10		1,566	1,566	
Reading Teacher	2.00		22,608	22,608	
Math Teacher	2.00		23,016	23,016	
Aide	8.00		29,648	29,648	
Secretary	.10		665	665	
FACILITIES		148,725	6,143	17,230	16.7
Space		142,292	6,143	16,407	
Office	2(300)	1,558	68	180	
Instructional	4(2,700)	140,737	6,075	16,227	
Furniture and Fixtures		6,433		823	
Standard		5,491		594	
Specialized		942		229	
EQUIPMENT		623	28	172	0.2
Exclusive Use		518	23	141	
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic	2	390	17	107	
Special Reading					
Special Math	4	128	6	34	
Shared Use		105	5	31	
Office					
Production	2	105	5	31	
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		3,740	6,337	7,434	7.2
Consumable			3,337	3,337	
Rewards			3,000	3,000	
Non-Consumable		3,740		1,107	
TRANSPORTATION			200	200	0.2
Field Trips			200	200	
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE			750	750	0.7
PUBLIC RELATIONS					
TOTAL COST		153,088	90,961	103,289	100.0
COST/STUDENT	202*			$511	
COST/STUDENT HOUR OF INSTRUCTION	27,594*			$3.74	

* Tutees only.

IRIT

TOTAL COST

PIP Type: IRIT

PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	5.08		64,877	64,877	73.4
Project Director	.50		9,875	9,875	
Lead Teacher	1.00		17,720	17,720	
Teacher	2.00		26,770	26,770	
Secretary	1.58		10,512	10,512	
FACILITIES		143,149	5,894	16,558	18.7
Space		136,030	5,894	15,746	
Office	1(370)	19,210	832	2,224	
Instructional	3(2,250)	116,820	5,062	13,522	
Furniture and Fixtures		7,119		812	
Standard		6,165		619	
Specialized		954		193	
EQUIPMENT		7,875	942	2,468	2.8
Exclusive Use		7,875	942	2,468	
Office					
Production	2	705	47	183	
Sound	37	3,045	418	1,081	
Projection	22	1,335	109	299	
Sound/Projection	3	645	97	254	
Photographic					
Special Reading	9	2,145	181	561	
Special Math	3		90	90	
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		9,450	513	3,310	3.8
Consumable			513	513	
Rewards					
Non-Consumable		9,450		2,797	
TRANSPORTATION			1,116	1,116	1.3
Field Trips					
Student			1,116	1,116	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		160,474	73,342	88,329	100.0
COST/STUDENT	135			$654	
COST/STUDENT HOUR OF INSTRUCTION	20,250			$4.36	

PIP Type: IRIT　　　　PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	4.50		62,861	62,861	67.1
Project Director	.50		15,914	15,914	
Teacher	3.00		41,767	41,767	
Secretary	1.00		5,180	5,180	
FACILITIES		170,160	7,086	19,626	21.0
Space		163,496	7,086	18,926	
Office	4(998)	51,816	2,246	5,998	
Instructional	5(2,151)	111,680	4,840	12,928	
Furniture and Fixtures		6,664		700	
Standard		5,752		591	
Specialized		912		109	
EQUIPMENT		12,240	1,488	3,880	4.1
Exclusive Use		12,040	1,478	3,848	
Office	1	470	24	90	
Production	4	1,025	86	273	
Sound	31	2,580	354	905	
Projection	14	890	54	180	
Sound/Projection	14	3,295	444	1,197	
Photographic					
Special Reading	18	3,780	426	1,113	
Special Math	3		90	90	
Shared Use		200	10	32	
Office	1	200	10	32	
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		7,341	4,894	7,067	7.5
Consumable			4,894	4,894	
Rewards					
Non-Consumable		7,341		2,173	
TRANSPORTATION			320	320	0.3
Field Trips					
Student			320	320	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		189,741	76,649	93,754	100.0
COST/STUDENT	130			$721	
COST/STUDENT HOUR OF INSTRUCTION	19,500			$4.81	

PIP Type: IRIT

PIP Site: 3

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	4.00		50,513	50,513	67.6
Project Director	.50		6,777	6,777	
Teacher	3.00		40,410	40,410	
Secretary	.50		3,326	3,326	
FACILITIES		117,781	4,781	13,705	18.4
Space		110,330	4,781	12,771	
Office	2(325)	16,874	731	1,953	
Instructional	3(1,800)	93,456	4,050	10,818	
Furniture and Fixtures		7,451		934	
Standard		6,143		616	
Specialized		1,308		318	
EQUIPMENT		7,392	935	2,592	3.5
Exclusive Use		7,195	925	2,534	
Office	9	715	34	152	
Production					
Sound	50	3,365	388	1,175	
Projection	10	885	72	198	
Sound/Projection	7	1,415	212	557	
Photographic					
Special Reading	3	815	99	274	
Special Math	4		120	120	
Shared Use		197	10	58	
Office					
Production	3	197	10	58	
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		9,264	1,547	4,289	5.8
Consumable			1,547	1,547	
Rewards					
Non-Consumable		9,264		2,742	
TRANSPORTATION			3,509	3,509	4.7
Field Trips					
Student			2,000	2,000	
Staff			1,509	1,509	
Local					
Out of Town			1,509	1,509	
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		134,437	61,285	74,608	100.0
COST/STUDENT	135			$553	
COST/STUDENT HOUR OF INSTRUCTION	17,820			$4.19	

PTR

TOTAL COST

PIP Type: PTR PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	15.00		76,361	76,361	84.1
Project Director	.50		9,125	9,125	
Tutor Supervisor	1.00		15,732	15,732	
Tutor	13.00		48,178	48,178	
Secretary	.50		3,326	3,326	
FACILITIES		107,221	4,500	12,372	13.6
Space		103,840	4,500	12,020	
Office	1(300)	15,576	675	1,803	
Instructional	3(1,700)	88,264	3,825	10,217	
Furniture and Fixtures		3,381		352	
Standard		2,580		267	
Specialized		801		85	
EQUIPMENT		2,875	166	603	0.7
Exclusive Use		2,660	151	551	
Office	2	680	34	152	
Production	1	1,800	90	346	
Sound					
Projection	1	180	27	53	
Sound/Projection					
Photographic					
Special Reading					
Special Math					
Shared Use		215	15	52	
Office					
Production	3	40	4	12	
Sound	16	30	4	12	
Projection	68	145	7	28	
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		636	1,277	1,465	1.6
Consumable			1,277	1,277	
Rewards					
Non-Consumable		636		188	
TRANSPORTATION					
Field Trips					
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		110,732	82,304	90,801	100.0
COST/STUDENT	169			$537	
COST/STUDENT HOUR OF INSTRUCTION	7,605			$11.94	

PIP Type: PTR PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	19.49		99,427	99,427	69.6
Project Director	.50		9,134	9,134	
Tutor Supervisor	1.00		7,763	7,763	
Tutor	17.84		81,532	81,532	
Secretary	.15		998	998	
FACILITIES		362,774	14,940	42,017	29.4
Space		344,748	14,940	39,906	
Office	3(420)	21,806	945	2,524	
Instructional	14(6,220)	322,942	13,995	37,382	
Furniture and Fixtures		18,026		2,111	
Standard		12,601		1,274	
Specialized		5,425		837	
EQUIPMENT		887	49	421	0.3
Exclusive Use		200		200	
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading	25	200		200	
Special Math					
Shared Use		687	49	221	
Office	1	70	4	14	
Production	14	467	23	110	
Sound					
Projection					
Sound/Projection	1	150	22	97	
Photographic					
Special Reading					
Special Math					
MATERIALS			771	771	0.5
Consumable			771	771	
Rewards					
Non-Consumable					
TRANSPORTATION			300	300	0.2
Field Trips					
Student					
Staff			300	300	
Local			300	300	
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL COST		363,661	115,487	142,936	100.0
COST/STUDENT	330			$433	
COST/STUDENT HOUR OF INSTRUCTION	10,704			$13.35	

R-3

TOTAL COST

PIP Type: R-3 PIP Site: 1

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	20.00		156,719	156,719	66.9
Project Director	1.00		12,528	12,528	
Reading Teacher	3.00		36,768	36,768	
Math Teacher	3.00		35,952	35,952	
Social Studies Teacher	3.00		31,464	31,464	
Aide	9.00		33,354	33,354	
Secretary	1.00		6,653	6,653	
FACILITIES		560,933	23,625	64,770	27.6
Space		545,475	23,625	63,105	
Office	1(1,500)	77,925	3,375	9,015	
Instructional	9(9,000)	467,550	20,250	54,090	
Furniture and Fixtures		15,458		1,665	
Standard		14,658		1,551	
Specialized		800		114	
EQUIPMENT		8,067	823	2,932	1.2
Exclusive Use		5,216	592	2,207	
Office					
Production	1	413	21	121	
Sound	26	1,747	204	607	
Projection	10	739	19	124	
Sound/Projection	12	2,317	348	1,355	
Photographic					
Special Reading					
Special Math					
Shared Use		2,851	231	725	
Office					
Production	2	174	16	38	
Sound	60	427	25	143	
Projection	65	1,159	93	270	
Sound/Projection	23	860	97	274	
Photographic					
Special Reading					
Special Math					
MATERIALS		18,825	2,056	7,628	3.3
Consumable			2,056	2,056	
Rewards					
Non-Consumable		18,825		5,572	
TRANSPORTATION			2,436	2,436	1.0
Field Trips			1,431	1,431	
Student					
Staff			1,005	1,005	
Local					
Out of Town			1,005	1,005	
TECHNICAL ASSISTANCE			25	25	0.0
PUBLIC RELATIONS					
TOTAL COST		587,825	185,684	234,510	100.0
COST/STUDENT	350			$670	
COST/STUDENT HOUR OF INSTRUCTION	141,750			$1.65	

PIP Type: R-3 PIP Site: 2

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	12.00		89,770	89,770	64.2
Project Director	1.00		13,625	13,625	
Reading Teacher	1.00		13,752	13,752	
Math Teacher	2.00		23,424	23,424	
Social Studies Teacher	1.00		10,080	10,080	
Aide	6.00		22,236	22,236	
Secretary	1.00		6,653	6,653	
FACILITIES		187,822	7,650	21,893	15.7
Space		176,528	7,650	20,434	
Office	1(600)	31,152	1,350	3,606	
Instructional	4(2,800)	145,376	6,300	16,828	
Furniture and Fixtures		11,294		1,459	
Standard		8,170		811	
Specialized		3,124		648	
EQUIPMENT		4,490	512	1,477	1.1
Exclusive Use		4,490	512	1,477	
Office					
Production	3	1,230	98	361	
Sound	8	620	93	212	
Projection	9	645	27	119	
Sound/Projection					
Photographic	1	35		13	
Special Reading	2	490	74	193	
Special Math	6	1,470	220	579	
Shared Use					
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		11,700	7,800	11,263	8.1
Consumable			7,800	7,800	
Rewards					
Non-Consumable		11,700		3,463	
TRANSPORTATION			9,191	9,191	6.6
Field Trips			9,106	9,106	
Student					
Staff			85	85	
Local			85	85	
Out of Town					
TECHNICAL ASSISTANCE			5,000	5,000	3.6
PUBLIC RELATIONS			1,000	1,000	0.7
TOTAL COST		204,012	120,923	139,594	100.0
COST/STUDENT	130			$1,074	
COST/STUDENT HOUR OF INSTRUCTION	70,200			$1.99	

PIP Type: R-3 PIP Site: 3

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	22.00		177,209	177,209	72.3
Project Director	1.00		19,654	19,654	
Reading Teacher	4.00		45,624	45,624	
Math Teacher	3.00		32,548	32,548	
Social Studies Teacher	3.00		35,670	35,670	
Aide	10.00		37,060	37,060	
Secretary	1.00		6,653	6,653	
FACILITIES		360,233	14,375	42,148	17.2
Space		340,008	14,375	39,358	
Office	2(150)	7,788	338	902	
Instructional	11(7,700)	332,220	14,397	38,456	
Furniture and Fixtures		20,225		2,790	
Standard		15,229		1,618	
Specialized		4,947		1,172	
EQUIPMENT		14,611	962	3,536	1.4
Exclusive Use		2,806	146	613	
Office	1	470	24	90	
Production	1	420	21	123	
Sound					
Projection	21	1,436	53	258	
Sound/Projection					
Photographic					
Special Reading	2	480	48	142	
Special Math					
Shared Use		11,805	816	2,923	
Office	1	88	4	17	
Production	13	3,525	253	1,097	
Sound	30	1,392	182	452	
Projection	21	1,434	106	315	
Sound/Projection	14	5,241	271	1,026	
Photographic	4	125		16	
Special Reading					
Special Math					
MATERIALS		11,132	3,228	6,523	2.6
Consumable			3,228	3,228	
Rewards					
Non-Consumable		11,132		3,295	
TRANSPORTATION			12,665	12,665	5.2
Field Trips			12,345	12,345	
Student					
Staff			320	320	
Local			320	320	
Out of Town					
TECHNICAL ASSISTANCE			1,924	1,924	0.8
PUBLIC RELATIONS			1,125	1,125	0.5
TOTAL COST		385,976	211,488	245,130	100.0
COST/STUDENT	363			$675	
COST/STUDENT HOUR OF INSTRUCTION	166,072			$1.48	

PIP Type: R-3　PIP Site: 4

Resource	Quantity Used	Capital Investment Cost	Annual Operating Cost	Total Annualized Cost	Percent of Total
STAFF	19.00		177,563	177,563	71.2
Project Director	1.00		20,349	20,349	
Reading Teacher	3.00		39,053	39,053	
Math Teacher	3.00		37,880	37,880	
Social Studies Teacher	3.00		38,014	38,014	
Aide	7.00		25,942	25,942	
Secretary	1.00		6,653	6,653	
Reading Specialist	1.00		9,672	9,672	
FACILITIES		515,311	21,229	60,118	24.1
Space		490,148	21,229	56,704	
Office	1(315)	16,364	708	1,893	
Instructional	10(9,120)	473,784	20,520	54,811	
Furniture and Fixtures		25,163		3,414	
Standard		17,394		1,821	
Specialized		7,769		1,593	
EQUIPMENT		13,741	1,274	5,128	2.0
Exclusive Use		5,398	559	1,806	
Office	3	980	47	196	
Production					
Sound	17	1,158	148	423	
Projection	4	422	18	76	
Sound/Projection	2	389	58	251	
Photographic	2	365	17	110	
Special Reading	8	1,897	262	701	
Special Math	6	187	9	49	
Shared Use		8,343	715	3,322	
Office					
Production	6	1,147	79	1,430	
Sound	27	1,706	247	563	
Projection	21	924	63	195	
Sound/Projection	31	4,566	326	1,134	
Photographic					
Special Reading					
Special Math					
MATERIALS		3,069	1,577	2,485	1.0
Consumable			1,577	1,577	
Rewards					
Non-Consumable		3,069		908	
TRANSPORTATION			4,188	4,188	1.7
Field Trips			4,100	4,100	
Student					
Staff			88	88	
Local					
Out of Town			88	88	
TECHNICAL ASSISTANCE			61	61	0.0
PUBLIC RELATIONS					
TOTAL COST		532,121	205,892	249,543	100.0
COST/STUDENT	221			$1,129	
COST/STUDENT HOUR OF INSTRUCTION	122,286			$2.04	

APPENDIX B

IMPLEMENTATION (INCREMENTAL): STANDARDIZED[*]

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[*] Definitions: pp. 6 ff.
Discussion: pp. 65 ff.

PIP: Catch-Up

Resource Category	First-Year Costs		Annual Recurring Costs	
	$/Student	$/Lab	$/Student	$/Lab
Staff	485	29,263	485	29,263
Furniture	10	625	4	257
Equipment	52	3,125	14	860
Materials	133	8,085	50	3,030
Transportation	8	458	8	458
Technical Assistance	3	152	3	152
Public Relations	2	107	2	107
Total	693	41,815	566	34,127

Students/Lab: 60

PIP: Conquest

Resource Category	First-Year Costs $/Student	Annual Recurring Costs $/Student
Staff	529	529
Furniture	18	4
Equipment	17	7
Materials	87	32
Transportation	4	4
Technical Assistance	1	1
Public Relations	1	1
Total	657	578

PIP: HIT

Resource Category	First-Year Costs		Annual Recurring Costs	
	$/Student	$/Center	$/Student	$/Center
Staff	330	20,123	330	20,123
Furniture	21	1,307	3	205
Equipment	5	312	2	81
Materials	47	2,861	31	1,904
Transportation	4	254	4	254
Technical Assistance	2	107	2	107
Public Relations	0	0	0	0
Total	409	24,964	372	22,674

Students/Center: 61

PIP: IRIT

Resource Category	First-Year Costs		Annual Recurring Costs	
	$/Student	$/Team	$/Student	$/Team
Staff	446	59,417	446	59,417
Furniture	9	1,139	6	815
Equipment	71	9,525	22	2,950
Materials	83	11,003	37	4,889
Transportation	12	1,648	12	1,648
Technical Assistance	0	0	0	0
Public Relations	0	0	0	0
Total	621	82,734	523	69,719

Students/Team: 133

PIP: PTR

Resource Category	First-Year Costs $/Student	Annual Recurring Costs $/Student
Staff	352	352
Furniture	1	5
Equipment	6	1
Materials	5	5
Transportation	1	1
Technical Assistance	0	0
Public Relations	0	0
Total	365	364

PIP: R-3*

Resource Category	First Year Costs		Annual Recurring Costs	
	$/Student	$/Teacher	$/Student	$/Teacher
Staff	278	8,961	278	8,961
Furniture	18	570	8	271
Equipment	8	256	5	159
Materials	43	1,376	18	574
Transportation	21	665	21	665
Technical Assistance	2	69	2	69
Public Relations	1	39	1	39
Total	371	11,936	333	10,738

Students/Teacher: 32

*The data collected at R-3(2) were excluded when calculating standardized implementation costs. The funding policy at R-3(2) differed from that at other R-3 sites; data use, in this instance, was therefore improper.

Appendix C

IMPLEMENTATION (INCREMENTAL) COSTS: ACTUAL[*]

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[*] Definitions: pp. 6 ff.
Discussion: pp. 65 ff.

CATCH-UP

IMPLEMENTATION COST

PIP Type: CATCH-UP PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	6.75		63,478	63,478	62.1
Project Director	.50		6,037	6,037	
Lead Teacher	1.50		21,290	21,290	
Teacher	3.00		27,970	27,970	
Aide	1.50		4,699	4,699	
Secretary	.75		3,482	3,482	
FACILITIES					
Space					
Office					
Instructional					
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT		12,362		12,362	12.1
Office					
Production	3	625		625	
Sound	30	1,864		1,864	
Projection	6	960		960	
Sound/Projection	3	633		633	
Photographic					
Special Reading	12	3,180		3,180	
Special Math	6	5,100		5,100	
MATERIALS		25,142	275	25,417	24.9
Consumable			275	275	
Rewards					
Non-Consumable		25,142		25,142	
TRANSPORTATION			86	86	.1
Field Trips					
Student					
Staff			86	86	
Local					
Out of Town			86	86	
TECHNICAL ASSISTANCE			100	100	.1
PUBLIC RELATIONS			750	750	.7
TOTAL		37,504	64,689	102,193	100.0
COST/STUDENT	184	$203	$352	$555	
COST/STUDENT HOUR OF INSTRUCTION	17,100	$2.20	$3.78	$5.98	

PIP Type: CATCH-UP PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	4.16		36,133	36,133	78.2
Project Director	.50		7,201	7,201	
Lead Teacher	.50		7,201	7,201	
Teacher	1.00		10,936	10,936	
Aide	.50		2,479	2,479	
High School Aide	.66		828	828	
Secretary	.50		3,744	3,744	
Bookkeeper	.50		3,744	3,744	
FACILITIES		2,600		2,600	5.6
Space		2,600		2,600	
Office		586		586	
Instructional		2,014		2,014	
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT		2,885	60	2,945	6.4
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math	5	2,885	60	2,945	
MATERIALS		3,600	175	3,775	8.2
Consumable			175	175	
Rewards					
Non-Consumable		3,600		3,600	
TRANSPORTATION			750	750	1.6
Field Trips			150	150	
Student			600	600	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		9,085	37,118	46,203	100.0
COST/STUDENT	66	$138	$562	$700	
COST/STUDENT HOUR OF INSTRUCTION	11,570	$.78	$3.21	$3.99	

PIP Type: CATCH-UP PIP Site: 3

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	3.84		28,239	28,239	74.2
Project Director	.39		4,491	4,491	
Lead Teacher	.81		6,349	6,349	
Teacher	1.50		12,821	12,821	
Aide	.75		2,587	2,587	
Secretary	.39		1,991	1,991	
FACILITIES		2,168	165	2,333	6.1
Space			165	165	
Office					
Instructional			165	165	
Furniture and Fixtures		2,168		2,168	
Standard		1,249		1,249	
Specialized		919		919	
EQUIPMENT		987	60	1,047	2.7
Office					
Production					
Sound	4	328		328	
Projection	2	459		459	
Sound/Projection	1	200		200	
Photographic					
Special Reading	2		60	60	
Special Math					
MATERIALS		5,064	618	5,682	14.9
Consumable			618	618	
Rewards					
Non-Consumable		5,064		5,064	
TRANSPORTATION			818	818	2.1
Field Trips					
Student					
Staff			818	818	
Local					
Out of Town			818	818	
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		8,219	29,900	38,119	100.0
COST/STUDENT	54	$152	$554	$706	
COST/STUDENT HOUR OF INSTRUCTION	4,860	$1.68	$6.15	$7.83	

PIP Type: CATCH-UP PIP Site: 4

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	3.31		28,792	28,792	62.5
Project Director	.50		7,622	7,622	
Lead Teacher	.60		6,263	6,263	
Teacher	1.13		10,578	10,578	
Aide	.54		1,979	1,979	
Secretary	.54		2,350	2,350	
FACILITIES		233		233	.5
Space					
Office					
Instructional					
Furniture and Fixtures		233		233	
Standard					
Specialized		233		233	
EQUIPMENT		3,625		3,625	7.9
Office	1	202		202	
Production	2	601		601	
Sound	6	441		441	
Projection					
Sound/Projection					
Photographic					
Special Reading	2	499		499	
Special Math	4	1,882		1,882	
MATERIALS		7,483	4,728	12,211	26.6
Consumable			4,728	4,728	
Rewards					
Non-Consumable		7,483		7,483	
TRANSPORTATION			300	300	.7
Field Trips					
Student					
Staff			300	300	
Local			300	300	
Out of Town					
TECHNICAL ASSISTANCE			815	815	1.8
PUBLIC RELATIONS					
TOTAL		11,341	34,635	45,976	100.0
COST/STUDENT	64	$177	$541	$718	
COST/STUDENT HOUR OF INSTRUCTION	7,680	$1.48	$4.51	$5.99	

PIP Type: CATCH-UP PIP Site: 5

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	3.27		32,068	32,068	64.6
Project Director	.57		11,405	11,405	
Lead Teacher	.50		6,144	6,144	
Teacher	1.00		9,551	9,551	
Aide	.50		2,234	2,234	
Secretary	.50		2,234	2,234	
Custodian	.20		500	500	
FACILITIES		1,943		1,943	3.9
Space		—	—	—	
Office					
Instructional					
Furniture and Fixtures		1,943	—	1,943	
Standard		1,943		1,943	
Specialized					
EQUIPMENT		5,335		5,335	10.8
Office	2	650		650	
Production	3	720		720	
Sound	4	320		320	
Projection					
Sound/Projection	4	462		462	
Photographic					
Special Reading	1	250		250	
Special Math	4	2,933		2,933	
MATERIALS		8,654	212	8,866	17.9
Consumable			212	212	
Rewards					
Non-Consumable		8,654		8,654	
TRANSPORTATION			1,250	1,250	2.5
Field Trips					
Student					
Staff			1,250	1,250	
Local			1,250	1,250	
Out of Town					
TECHNICAL ASSISTANCE			150	150	0.3
PUBLIC RELATIONS					
TOTAL		15,932	33,680	49,612	100.0
COST/STUDENT	54	$295	$624	$919	
COST/STUDENT HOUR OF INSTRUCTION	7,345	$2.17	$4.59	$6.76	

CONQUEST
IMPLEMENTATION COST

PIP Type: CONQUEST PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	10.95		98,310	98,310	78.9
Project Director	.95		14,908	14,908	
Lead Teacher	1.00		10,376	10,376	
Clinician	4.00		47,751	47,751	
Aide	3.00		8,835	8,835	
Secretary	1.00		5,196	5,196	
Counselor	1.00		11,244	11,244	
FACILITIES		5,084		5,084	4.1
Space		—	—	—	
Office					
Instructional					
Furniture and Fixtures		5,084	—	5,084	
Standard		2,230		2,230	
Specialized		2,854		2,854	
EQUIPMENT		5,741		5,741	4.6
Office					
Production					
Sound	15	1,134		1,134	
Projection	15	1,357		1,357	
Sound/Projection					
Photographic					
Special Reading	12	3,100		3,100	
Special Math	5	150		150	
MATERIALS		11,900	1,257	13,157	10.7
Consumable			1,257	1,257	
Rewards					
Non-Consumable		11,900		11,900	
TRANSPORTATION			360	360	.3
Field Trips					
Student					
Staff			360	360	
Local			360	360	
Out of Town					
TECHNICAL ASSISTANCE			250	250	.2
PUBLIC RELATIONS			1,500	1,500	1.2
TOTAL		22,725	101,677	124,402	100.0
COST/STUDENT	140	$162	$726	$888	
COST/STUDENT HOUR OF INSTRUCTION	22,167	$1.02	$4.59	$5.61	

PIP Type: CONQUEST PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	18.50		204,164	204,164	80.4
Project Director	1.00		20,628	20,628	
Supervisor Clinician	2.00		38,393	38,393	
Clinician	12.00		118,684	118,684	
Aide	1.50		5,662	5,662	
Clerk	1.00		5,202	5,202	
Counselor	1.00		15,595	15,595	
FACILITIES		7,845		7,845	3.1
Space					
Office					
Instructional					
Furniture and Fixtures		7,845		7,845	
Standard		254		254	
Specialized		7,591		7,591	
EQUIPMENT		6,133	260	6,393	2.5
Office	1	460		460	
Production					
Sound	24	1,791		1,791	
Projection	9	1,175		1,175	
Sound/Projection					
Photographic					
Special Reading	16	2,212		2,212	
Special Math	8	495	260	755	
MATERIALS		32,502	2,156	34,658	13.6
Consumable			2,156	2,156	
Rewards					
Non-Consumable		32,502		32,502	
TRANSPORTATION			1,000	1,000	0.4
Field Trips					
Student					
Staff			1,000	1,000	
Local			1,000	1,000	
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		46,480	207,580	254,060	100.0
COST/STUDENT	458	$102	$453	$555	
COST/STUDENT HOUR OF INSTRUCTION	56,538	$.82	$3.67	$4.49	

PIP Type: CONQUEST PIP Site: 3

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	20.60		220,793	220,793	88.0
Project Director	.50		10,604	10,604	
Supervisor Clinician	2.00		37,356	37,356	
Reading Interns	6.00		66,691	66,691	
Clinician	4.50		67,818	67,818	
Aide	6.00		22,455	22,455	
Secretary	.60		3,881	3,881	
Guidance Intern	1.00		11,988	11,988	
FACILITIES		4,873		4,873	1.9
Space					
Office					
Instructional					
Furniture and Fixtures		4,873		4,873	
Standard		1,419		1,419	
Specialized		3,454		3,454	
EQUIPMENT		6,852		6,852	2.8
Office	2	1,779		1,779	
Production					
Sound	14	1,051		1,051	
Projection	5	128		128	
Sound/Projection	7	1,003		1,003	
Photographic					
Special Reading	16	2,376		2,376	
Special Math	7	515		515	
MATERIALS		12,334	3,820	16,154	6.4
Consumable			3,820	3,820	
Rewards					
Non-Consumable		12,334		12,334	
TRANSPORTATION			2,250	2,250	.9
Field Trips					
Student					
Staff			2,250	2,250	
Local					
Out of Town					
TECHNICAL ASSISTANCE			50	50	
PUBLIC RELATIONS					
TOTAL		24,059	226,913	250,972	100.0
COST/STUDENT	358	$ 67	$634	$701	
COST/STUDENT HOUR OF INSTRUCTION	62,441	$.39	$3.63	$4.02	

HIT
IMPLEMENTATION COST

PIP Type: HIT PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	9.14		44,217	44,217	70.9
Project Director	.07		753	753	
Reading Teacher	2.00		15,406	15,406	
Math Teacher	1.00		8,738	8,738	
Aide	6.00		18,900	18,900	
Secretary	.07		420	420	
FACILITIES		5,099	427	5,526	8.9
Space			427	427	
Office			427	427	
Instructional					
Furniture and Fixtures		5,099		5,099	
Standard		5,099		5,099	
Specialized					
EQUIPMENT		1,058		1,058	1.7
Office					
Production	2	1,058		1,058	
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading					
Special Math					
MATERIALS		5,775	4,176	9,951	16.0
Consumable			3,248	3,248	
Rewards			928	928	
Non-Consumable		5,775		5,775	
TRANSPORTATION			1,578	1,578	2.5
Field Trips					
Student			1,368	1,368	
Staff			210	210	
Local			210	210	
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		11,932	50,398	62,330	100.0
COST/STUDENT	225*	$ 53	$224	$277	
COST/STUDENT HOUR OF INSTRUCTION	16,704*	$.71	$3.02	$3.73	

* Tutees only

PIP Type: HIT PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF			97,191	97,191	86.1
Project Director	.10		2,033	2,033	
Reading Teacher	2.00		28,406	28,406	
Math Teacher	2.00		30,812	30,812	
Aide	8.00		35,026	35,026	
Secretary	.10		914	914	
FACILITIES		4,204		4,204	3.7
Space					
Office					
Instructional					
Furniture and Fixtures		4,204		4,204	
Standard		4,204		4,204	
Specialized					
EQUIPMENT		490		490	0.4
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic	2	410		410	
Special Reading					
Special Math	4	80		80	
MATERIALS		3,740	6,337	10,077	8.9
Consumable			3,337	3,337	
Rewards			3,000	3,000	
Non-Consumable		3,740		3,740	
TRANSPORTATION			200	200	0.2
Field Trips			200	200	
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE			750	750	0.7
PUBLIC RELATIONS					
TOTAL		8,434	104,478	112,912	100.0
COST/STUDENT	202*	$ 42	$517	$559	
COST/STUDENT HOUR OF INSTRUCTION	27,594*	$.30	$3.79	$4.09	

* Tutees only

IRIT

IMPLEMENTATION COST

PIP Type: IRIT PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	5.08		57,092	57,092	73.2
Project Director	.50		9,074	9,074	
Lead Teacher	1.00		16,393	16,393	
Teacher	2.00		24,171	24,171	
Secretary	1.58		7,454	7,454	
FACILITIES					
Space					
Office					
Instructional					
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT		9,858		9,858	12.6
Office					
Production	2	350		350	
Sound	37	3,294		3,294	
Projection	22	1,581		1,581	
Sound/Projection	3	718		718	
Photographic					
Special Reading	9	2,430		2,430	
Special Math	3	1,485		1,485	
MATERIALS		9,450	513	9,963	12.8
Consumable			513	513	
Rewards					
Non-Consumable		9,450		9,450	
TRANSPORTATION			1,116	1,116	1.4
Field Trips					
Student			1,116	1,116	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		19,308	58,721	78,029	100.0
COST/STUDENT	135	$143	$435	$578	
COST/STUDENT HOUR OF INSTRUCTION	20,250	$.95	$2.90	$3.85	

PIP Type: IRIT PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	4.50		38,357	38,357	64.3
Project Director	.50		5,490	5,490	
Teacher	3.00		28,840	28,840	
Secretary	1.00		4,027	4,027	
FACILITIES		251		251	0.4
Space					
Office					
Instructional					
Furniture and Fixtures		251		251	
Standard		120		120	
Specialized		131		131	
EQUIPMENT		8,559		8,559	14.3
Office					
Production	4	1,046		1,046	
Sound	26	1,479		1,479	
Projection	14	657		657	
Sound/Projection	13	1,456		1,456	
Photographic					
Special Reading	18	2,394		2,394	
Special Math	3	1,527		1,527	
MATERIALS		7,341	4,894	12,235	20.5
Consumable			4,894	4,894	
Rewards					
Non-Consumable		7,341		7,341	
TRANSPORTATION			320	320	0.5
Field Trips					
Student			320	320	
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		16,151	43,571	59,722	100.0
COST/STUDENT	130	$124	$335	$459	
COST/STUDENT HOUR OF INSTRUCTION	19,500	$.83	$2.23	$3.06	

PIP Type: IRIT PIP Site: 3

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	4.00		56,183	56,183	70.8
Project Director	.50		7,616	7,616	
Teacher	3.00		45,414	45,414	
Secretary	.50		3,153	3,153	
FACILITIES		4,288		4,288	5.4
Space					
Office					
Instructional					
Furniture and Fixtures		4,288		4,288	
Standard		2,315		2,315	
Specialized		1,973		1,973	
EQUIPMENT		4,447	120	4,567	5.8
Office	9	351		351	
Production					
Sound	48	1,966		1,966	
Projection	10	819		819	
Sound/Projection	7	512		512	
Photographic					
Special Reading	3	799		799	
Special Math	4		120	120	
MATERIALS		9,264	1,547	10,811	13.6
Consumable			1,547	1,547	
Rewards					
Non-Consumable		9,264		9,264	
TRANSPORTATION			3,509	3,509	4.4
Field Trips					
Student			2,000	2,000	
Staff			1,509	1,509	
Local					
Out of Town			1,509	1,509	
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		17,999	61,359	79,358	100.0
COST/STUDENT	135	$133	$455	$588	
COST/STUDENT HOUR OF INSTRUCTION	17,820	$1.01	$3.44	$4.45	

PTR
IMPLEMENTATION COST

PIP Type: PTR PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	15.00		45,808	45,808	91.0
Project Director	.50		5,250	5,250	
Tutor Supervisor	1.00		9,058	9,058	
Tutor	13.00		29,250	29,250	
Secretary	.50		2,250	2,250	
FACILITIES					
Space					
Office					
Instructional					
Furniture and Fixtures					
Standard					
Specialized					
EQUIPMENT		2,864		2,864	5.7
Office	2	839		839	
Production	1	1,800		1,800	
Sound					
Projection					
Sound/Projection	1	225		225	
Photographic					
Special Reading					
Special Math					
MATERIALS		387	1,277	1,664	3.3
Consumable			1,277	1,277	
Rewards					
Non-Consumable		387		387	
TRANSPORTATION					
Field Trips					
Student					
Staff					
Local					
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		3,251	47,085	50,336	100.0
COST/STUDENT	169	$19	$279	$298	
COST/STUDENT HOUR OF INSTRUCTION	7,605	$.43	$6.19	$6.62	

PIP Type: PTR PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	19.49		77,040	77,040	96.8
Project Director	.50		6,970	6,970	
Tutor Supervisor	1.00		5,970	5,970	
Tutor	17.84		63,273	63,273	
Secretary	.15		827	827	
FACILITIES		1,229		1,229	1.5
Space		—	—	—	
Office					
Instructional					
Furniture and Fixtures		1,229	—	1,229	
Standard		1,229		1,229	
Specialized					
EQUIPMENT		200		200	0.3
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic					
Special Reading	25	200		200	
Special Math					
MATERIALS			771	771	1.0
Consumable			771	771	
Rewards					
Non-Consumable					
TRANSPORTATION			300	300	0.4
Field Trips					
Student					
Staff			300	300	
Local			300	300	
Out of Town					
TECHNICAL ASSISTANCE					
PUBLIC RELATIONS					
TOTAL		1,429	78,111	79,540	100.0
COST/STUDENT	330	$4	$237	$241	
COST/STUDENT HOUR OF INSTRUCTION	10,704	$.13	$7.30	$7.43	

R-3

IMPLEMENTATION COST

PIP Type: R-3 PIP Site: 1

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	14.00		97,372	97,372	82.8
Project Director	1.00		14,058	14,058	
Reading Teacher	1.00		10,402	10,402	
Math Teacher	1.00		10,402	10,402	
Social Studies Teacher	1.00		10,402	10,402	
Aide	9.00		46,338	46,338	
Secretary	1.00		5,770	5,770	
FACILITIES		1,127		1,127	1.0
Space					
Office					
Instructional					
Furniture and Fixtures		1,127		1,127	
Standard		1,127		1,127	
Specialized					
EQUIPMENT		2,528		2,528	2.1
Office					
Production	1	496		496	
Sound	26	1,147		1,147	
Projection	1	386		386	
Sound/Projection	3	499		499	
Photographic					
Special Reading					
Special Math					
MATERIALS		12,057	2,056	14,113	12.0
Consumable			2,056	2,056	
Rewards					
Non-Consumable		12,057		12,057	
TRANSPORTATION			2,436	2,436	2.1
Field Trips			1,431	1,431	
Student					
Staff			1,005	1,005	
Local			1,005	1,005	
Out of Town					
TECHNICAL ASSISTANCE			25	25	0.0
PUBLIC RELATIONS					
TOTAL		15,712	101,889	117,601	100.0
COST/STUDENT	350	$45	$291	$336	
COST/STUDENT HOUR OF INSTRUCTION	141,750	$.11	$.72	$.83	

PIP Type: R-3 PIP Site: 2

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	12.00		71,386	71,386	63.2
Project Director	1.00		10,096	10,096	
Reading Teacher	1.00		9,305	9,305	
Math Teacher	2.00		17,105	17,105	
Social Studies Teacher	1.00		8,605	8,605	
Aide	6.00		21,600	21,600	
Secretary	1.00		4,675	4,675	
FACILITIES		4,729	2,200	6,929	6.1
Space			2,200	2,200	
Office			2,200	2,200	
Instructional					
Furniture and Fixtures		4,729		4,729	
Standard		2,729		2,729	
Specialized		2,000		2,000	
EQUIPMENT		52		52	0.0
Office					
Production					
Sound					
Projection					
Sound/Projection					
Photographic	1	52		52	
Special Reading					
Special Math					
MATERIALS		11,700	7,800	19,500	17.3
Consumable			7,800	7,800	
Rewards					
Non-Consumable		11,700		11,700	
TRANSPORTATION			9,191	9,191	8.1
Field Trips			9,106	9,106	
Student					
Staff			85	85	
Local			85	85	
Out of Town					
TECHNICAL ASSISTANCE			5,000	5,000	4.4
PUBLIC RELATIONS			1,000	1,000	0.9
TOTAL		16,481	96,577	113,058	100.0
COST/STUDENT	130	$127	$743	$870	
COST/STUDENT HOUR OF INSTRUCTION	70,200	$.23	$1.38	$1.61	

PIP Type: R-3 **PIP Site:** 3

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	15.00		100,558	100,558	72.5
Project Director	1.00		22,213	22,213	
Reading Teacher	1.00		10,272	10,272	
Math Teacher	1.00		12,149	12,149	
Social Studies Teacher	1.00		15,801	15,801	
Aide	10.00		33,076	33,076	
Secretary	1.00		7,047	7,047	
FACILITIES		6,803		6,803	4.9
Space					
Office					
Instructional					
Furniture and Fixtures		6,803		6,803	
Standard		6,739		6,739	
Specialized		64		64	
EQUIPMENT		1,316		1,316	1.0
Office	1	191		191	
Production	1	340		340	
Sound					
Projection					
Sound/Projection	1	785		785	
Photographic					
Special Reading					
Special Math					
MATERIALS		11,132	3,228	14,360	10.3
Consumable			3,228	3,228	
Rewards					
Non-Consumable		11,132		11,132	
TRANSPORTATION			12,665	12,665	9.1
Field Trips			12,345	12,345	
Student					
Staff			320	320	
Local			320	320	
Out of Town					
TECHNICAL ASSISTANCE			1,924	1,924	1.4
PUBLIC RELATIONS			1,125	1,125	0.8
TOTAL		19,251	119,500	138,751	100.0
COST/STUDENT	363	$53	$329	$382	
COST/STUDENT HOUR OF INSTRUCTION	166,072	$.12	$.72	$.84	

PIP Type: R-3 **PIP Site:** 4

Resource	Purchased Quantity	Capital Investment Cost	Annual Operating Cost	Total Cost	Percent of Total
STAFF	12.00		96,167	96,167	87.1
Project Director	1.00		24,614	24,614	
Reading Teacher	1.00		12,620	12,620	
Math Teacher	1.00		11,328	11,328	
Social Studies Teacher	1.00		12,800	12,800	
Aide	7.00		28,501	28,501	
Secretary	1.00		6,304	6,304	
FACILITIES		7,010		7,010	6.4
Space		182		182	
Office		182		182	
Instructional					
Furniture and Fixtures		6,828		6,828	
Standard		1,828		1,828	
Specialized		5,000		5,000	
EQUIPMENT		1,192		1,192	1.1
Office	2	471		471	
Production					
Sound					
Projection	1	35		35	
Sound/Projection					
Photographic	2	511		511	
Special Reading					
Special Math	6	175		175	
MATERIALS		846	912	1,758	1.6
Consumable			912	912	
Rewards					
Non-Consumable		846		846	
TRANSPORTATION			4,188	4,188	3.8
Field Trips			4,100	4,100	
Student					
Staff			88	88	
Local					
Out of Town			88	88	
TECHNICAL ASSISTANCE			61	61	0.0
PUBLIC RELATIONS					
TOTAL		9,048	101,328	110,376	100.0
COST/STUDENT	221	$41	$458	$499	
COST/STUDENT HOUR OF INSTRUCTION	122,286	$.07	$.83	$.90	

Appendix D

SAMPLE QUESTIONNAIRE

Ten separate questionnaires were developed for the purposes of data collection. Each was oriented toward a specific PIP type. We include only the IRIT questionnaire in this appendix because all the questionnaires were essentially the same, with the exception of differences in terminology for the particular PIP types. Many tables in this questionnaire have been reduced from the larger fold-out format used in the actual data collection instruments.

IRIT

PROJECT INFORMATION PACKAGE

RESOURCE QUESTIONNAIRE

OMB Approval No. ____________
Expires ____________________

IRIT

PROJECT INFORMATION PACKAGE
RESOURCE QUESTIONNAIRE

SRI Field Staff Member ____

INSTRUCTIONS TO RESPONDENTS

This questionnaire was designed as part of an effort to evaluate the feasibility of replicating IRIT projects in schools in the United States. Its specific purpose is to collect accurate information on the cost of replication. In addition to identifying all IRIT resources which your IRIT budget paid for, we are also interested in the quantity of resources which the IRIT project utilizes but does not pay for directly.

The questionnaire is organized into seven sections: general school characteristics, IRIT staffing, IRIT facilities, IRIT equipment, IRIT materials and software, IRIT transportation, and IRIT technical assistance. We are aware that all the required information cannot be provided by one person. The project director should seek assistance from individuals best qualified to provide accurate information. Please complete this questionnaire and return it to I.R.I.T. Project Director.

Key words are defined throughout the questionnaire. Please refer to these definitions as you answer questions. It is very important to familiarize yourself with these definitions because the meaning you associate with a given term may be very different from the one we have attached to it for the purposes of this questionnaire. If you have any questions concerning this questionnaire, please contact your I.R.I.T. Project Director.

PLEASE FILL IN THE FOLLOWING INFORMATION

District____

School____

City/State____

Phone____

Date Questionnaire Completed_______________________________

Please provide the following information for each individual providing questionnaire responses:

Name	Title	Telephone No.

SCHOOL/DISTRICT CHARACTERISTICS

In this section we are trying to gather general school demographic data. This will provide us with general descriptive characteristics of the school and the school system in which the IRIT project has been implemented.

1a. How many students are currently enrolled in the home school by grade? If the home school is ungraded, or if some of its classes are ungraded, use the equivalent grade. (IF NONE, WRITE "NONE.")

Grade	Number of Students in Grade
Pre-K	
K	
1	
2	
3	
4	
5	

Grade	Number of Students in Grade
6	
7	
8	
9	
10	
11	
12	

1b. How many students participate in the IRIT project in each cycle by by grade? (Please include participants from other schools if there are any.)

Cycle 1		Cycle 2		Cycle 3	
Grade	Number of Students Participating in IRIT	Grade	Number of Students Participating in IRIT	Grade	Number Students Participating in IRIT
Pre-K		Pre-K		Pre-K	
K		K		K	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	

DEFINITIONS:

Classroom	A room designed or adapted for regularly scheduled group instruction. This includes the so-called regular classrooms and special use classrooms such as laboratories and shops but excludes such rooms as auditoriums, lunchrooms, libraries, gymnasiums, offices, and large open-space classrooms.
Open-Space Classroom . .	Classrooms substantially larger than regular classrooms which can usually be partitioned into areas comparable to regular size classrooms.

---

2. Please indicate the NUMBER of each of the following types of facilities in the home school. If a facility is used for more than one purpose (e.g., a gym used also as a cafeteria), please indicate it only once.

FACILITY TYPE	NUMBER
Classrooms	
Open-Space Classrooms	
Gyms	
Cafeterias	
Libraries	
Auditoriums	

---

3. How many homerooms are in the home school?

____

---

4. How many levels (stories) does the home school building have?

____

---

5. Check approximately what year the home school building was constructed.

[ ] 1970-74
[ ] 1960-69
[ ] 1950-59
[ ] 1930-49
[ ] Before 1930

6a. Has the home school building ever been extensively remodeled?

[ ] Yes
[ ] No (Go to Q. 7)

b. For each occurrence please indicate the year of completion and the approximate cost (to nearest $50,000).

Occurrence	Year of Completion	Cost
1		
2		
3		
4		

7. How large are the home school grounds in acres?

__________ Acres

8. How many full-time classroom teachers are employed at the home school?

____

The remainder of this questionnaire is primarily concerned with the IRIT project. Please keep this under consideration when responding.

IRIT STAFFING

9. The table below is designed to provide comprehensive data on each member of the IRIT staff. This staff includes all personnel that are paid (regardless of funding source) and devote 10% or more of their time to the IRIT project. Please fill in the following table. In cases where the required data is not applicable, please mark (N/A).

1	2	3	4	5	6	7	8	For each of the five categories listed below, please indicate the percentage of each individual's time spent in each of the designated functional areas (see DEFINITIONS). The total for each individual should add up to 100%, and should be based on only the amount of time spent on the IRIT project (column 4).				
Staff Title	Initials*	Total Hours Worked Per Year	Hours Worked Per Year on IRIT	Annual Salary	Education: High School, AA, BA, MA, etc.	Years of Experience	Check This Column If Individual Was Hired Specifically for IRIT Project	Classroom	Planning Class Instruction	Evaluation of Students	Staff Development (Formal)	Administrative
Project Director												
Team Leader												
Team Teacher												
Team Teacher 2												
Secretary												
Other (Specify)												

*This is only to aid respondent in filling out table.

DEFINITIONS:

IRIT STAFFING	Any individual in the school system that devotes 10% or more of his time directly to the IRIT project. This does not include volunteer services.
Teacher	A certified professional with the primary responsibility for the instruction of a specified group of students (possibly in a specific subject area). This does not include professionals such as speech therapists, counselors, etc., who provide services to specific students as the need arises.
Instructional Aide	Paraprofessionals and nonprofessionals that assist the teacher through reinforcement of instruction. This does not include strictly clerical aides, playground aides, or lunchroom aides.
FUNCTIONAL AREAS	A defined set of categories into which the IRIT staff conceptually divide their time.
Classroom	The total time a staff member spends in the classroom with the students.
Planning (for class instruction)	Non-classroom time spent in planning classroom activities. This would include activities such as developing a lesson plan and preparing materials.
Evaluation of Students . .	Non-classroom time spent in activities related to monitoring student progress. This would include grading papers, reviewing, and updating a student's cumulative file, and time spent with other persons concerning specific students.
Staff Development (formal)	Time spent in activities designed to keep IRIT staff members trained in or abreast of current educational technology and techniques. This should include workshops before and during the academic session, seminars, and other formal activities. This should include that time spent by qualified individuals disseminating their expertise plus the time spent by the participating staff.
Administrative and Other .	All other activities which IRIT staff perform would fall in this area. Examples include project administration and planning, faculty meetings, promotional and public relations activities, and other inevitable nonstudent related responsibilities.

10. For each individual (or title) specified under "Other" in the staffing table on the previous page, write a brief description of his function with respect to the IRIT project.

11. For individuals which work on a voluntary basis on the IRIT project, please supply the following information. It is not necessary to provide information on an individual basis. We are only interested in staff type.

Volunteer Type	Description of Duties	Hours Per Week Worked on IRIT Project (total for all volunteers of this type)

IRIT FACILITIES

This section of the questionnaire solicits information on those facilities which are utilized by the IRIT project.

DEFINITIONS:

Classroom	A room designed or adapted for regularly scheduled group instruction. This includes the so-called regular classrooms and special use classrooms such as laboratories and shops but excludes such rooms as auditoriums, lunchrooms, libraries, gymnasiums, offices, and large open-space classrooms.
Open-Space Classroom . .	Classrooms substantially larger than regular classrooms which can usually be partitioned into areas comparable to regular size classrooms.

---

12. Please indicate below the NUMBER of different rooms of each of the following types that are utilized by the IRIT project.

FACILITY TYPE	NUMBER USED FOR IRIT
Classrooms	
Open-Space Classrooms	
Offices	
Conference Rooms (Multipurpose)	
Other (Specify): ______	
______	

13. For each unit (classroom, etc.) designated in Question 12, please provide the information in the following table.

Facility Type	Room Number (etc.)*	Hours Per Week Utilized by IRIT Project	Hours Per Week Utilized By All Other School-Related Activities	Floor Space in Square Feet	Numbers of the Following:									Check appropriate box if specified facility has the indicated feature		
					Professional Desks	Student Desks	Tables	Chairs	Feet of Shelf Space	Bulletin Boards	File Cabinet Drawers	Storage Cabinets	Blackboards	Carpeting	Air-Conditioning	Other (Specify)
Regular Classroom 1																
Regular Classroom 2																
Regular Classroom 3																
Regular Classroom 4																
Open-Spaced Classroom 1																
Open-Spaced Classroom 2																
Open-Spaced Classroom 3																
Open-Spaced Classroom 4																
Office 1																
Office 2																
Other (Specify)																

*This is only to aid respondent in filling out table.

DEFINITIONS:

IRIT FACILITIES	Space and furniture requirements for the IRIT project.
Classroom	A room designed or adapted for regularly scheduled group instruction. This includes the so-called regular classrooms and special use classrooms such as laboratories and shops but excludes such rooms as auditoriums, lunchrooms, libraries, gymnasiums, offices, and large open-space classrooms.
Open-Space Classroom .	Classrooms substantially larger than regular classrooms which can usually be partitioned into areas comparable to regular size classrooms.

14. Please indicate the NUMBERS and COSTS of the facilities listed below which were purchased this year from the IRIT budget. Also indicate the number of facilities used in the project but purchased from other sources. If none, write "NONE."

	IRIT Budget		Other Sources
	Number	Total Cost	Number
Professional Desks			
Student Desks			
Tables			
Chairs			
Feet of Shelf Space			
Bulletin Boards			
File Cabinet Drawers			
Storage Cabinets			
Carrels			
Carpeting (square feet)			
Air-Conditioning (rooms)			
Other (Specify)			

15. **Please provide a brief description of any facilities or furniture which were not addressed in the previous questions but are utilized in the** IRIT project. Also indicate whether the IRIT project shares these facilities with other programs in the school.

IRIT EQUIPMENT

In this section we are concerned only with the instructional equipment utilized by the IRIT project. Two tables will be filled out: one specifying equipment utilized exclusively by the IRIT project and one specifying equipment shared with other school or district personnel.

DEFINITION:

IRIT EQUIPMENT.	Equipment utilized for the purpose of instruction and/or its reinforcement. This should include equipment for the preparation of instructional materials such as mimeograph machines but should not include office equipment.

16. Is there any equipment that is EXCLUSIVELY assigned to or utilized by the IRIT project, classrooms or teachers?

☐ Yes
☐ No (Go to Q. 18)

17. Please provide information in the following table for all equipment types assigned EXCLUSIVELY to the IRIT project.

Equipment Type	Number of Units	Number of Units Purchased This Year	Cost in $ of Most Recent Unit Purchased*	Year in Which Most Recent Unit Was Purchased	Number of Years of Expected Usefulness	Check This Box if This Item Requires Periodic Maintenance or Repair
Ditto Machine						
Cassette Recorders						
Reel-to-Reel Recorders						
Phonographs						
Slide Projectors (Carousel)						
Film Strip Projector						
Film Loop Projector						
16mm Projector (Sound)						
Opaque Projector						
Overhead Projector						
Television						
Film Strip/Phonograph						
Cassette/Film Strip						
Controlled Reader						
Language Master						
System 80						
Typewriter						
Screen						
Film Strip Viewer						
Tachistoscope						
Headset						
[illegible]						
Rolling Table						
Paper Cutter						
Other (Specify)						

*If rented please indicate annual rent per unit and mark as rented.

DEFINITION:

IRIT EQUIPMENT.	Equipment utilized for the purpose of instruction and/or its reinforcement. This should include equipment for the preparation of instructional materials such as mimeograph machines but should not include office equipment.

18. Please provide information in the following table for all equipment types which are SHARED by the IRIT project personnel with other school and/or district personnel. Shared resources are defined as those equipment items which are purchased by the school and/or district and are made available to staff on a basis such as check-out or sign-out. This does not include equipment assigned to specific classrooms or staff for the academic year. Please do not include equipment never used by the IRIT staff or which was listed in Question 17.

Equipment Type	Total Number of Shared Units Available	Cost in $ of Most Recent Unit Purchased*	Year in Which Most Recent Unit Was Purchased	Number of Years of Expected Usefulness	Check This Box If This Item Requires Periodic Maintenance or Repair	Please check below the frequency with which IRIT STAFF use each equipment item (relative to other teachers in your school).				
						Much Less Often	Less Often	About the Same	More Often	Much More Often
Ditto Machine										
Cassette Recorders										
Reel-to-Reel Recorders										
Phonographs										
Slide Projectors (Carousel)										
Film Strip Projector										
Film Loop Projector										
16mm Projector (Sound)										
Opaque Projector										
Overhead Projector										
Television										
Film Strip/Phonograph										
Cassette/Film Strip										
Controlled Reader										
Language Master										
System 80										
Typewriter										
Screen										
Film Strip Viewer										
Tachistoscope										
Headset										
Lamp										
Rolling Table										
Paper Cutter										
Other (Specify)										

*If rented please indicate annual rent per unit and mark as rented.

DEFINITION:

IRIT EQUIPMENT.	Equipment utilized for the purpose of instruction and/or its reinforcement. This should include equipment for the preparation of instructional materials such as mimeograph machines but should not include office equipment.

IRIT MATERIALS, SOFTWARE AND SUPPLIES

This section is included to gather information on the costs and numbers of books and other materials purchased for the IRIT project.

DEFINITION:

IRIT MATERIALS AND SOFTWARE . . . . . Any instructional matter for the IRIT project. Included are books, software components of a hardware/software system, instructional games, kits such as the SRA Reading LAb, programed instructional materials, tests, etc. Comsumable supplies such as paper, pencils, etc. are not included.

Due to the wide variation in the kinds of materials utilized and the ways in which quantities are measured, a great deal of latitude is provided in the response format.

For the purposes of responding to this section of the questionnaire, we are dividing materials used by the IRIT project into two categories:

a. materials used in the IRIT project purchased this year, and

b. materials used in the IRIT project which were purchased in previous years.

In either category the source of funding is not important. The materials could have been purchased by the IRIT project budget, the school budget, or both.

---

19. Please provide the annual cost in the home school per teacher for general instructional supplies. Do not include cost of materials and software included in Questions 20 and 21.

$______________ Per teacher

---

20. Please attach copies of purchase orders for all materials and software purchased for your IRIT project THIS school year. Be sure to include materials purchased regardless of funding source. The purchase orders should be legible and should identify each specific item and its cost. If purchase orders are unavailable for any items please list below these types of materials, their quantity, and total cost. On page 21 of this questionnaire is a list from the PIP materials for the IRIT project.

Materials		
Item	Quantity	Total Cost

21. Please fill in the following chart indicating the proper information for all materials and software utilized in the IRIT project which were purchased in PREVIOUS school years.

The respondent is free to quantify materials as he feels appropriate, provided accurate unit cost and expected life of a unit can be provided. Expected life of materials is the number of years the item can be used before being replaced by more current and up-to-date materials. In other words, expected life is the number of years the item is a principal component of the instructional program.

DEFINITION:

IRIT MATERIALS AND SOFTWARE	Any instructional matter for the IRIT project. Included are books, instructional games, kits such as the SRA Reading Lab, programed instruction materials software components of a hardware/software system (e.g., tapes, records and other materials used with the equipment listed on pages 12 and 13), tests, etc.

	Number of Units Used IRIT	Cost Per Unit in Dollars for Latest Purchase	Number of Years of Expected Usefulness Per Unit
Books Specify Title and Publisher:			
Instructional Kits and Programmed Materials Specify Name, Type, and Publisher:			
Software Components of a Hardware/Software System Specify Name and Publisher:			
Other Specify Name, Type, and Publisher:			

IRIT TRANSPORTATION

This section is designed to provide information on the type and cost of transportation which is necessary because of the IRIT project. We are not interested in regular school bus service to and from the student's or staff's homes. We are interested in transportation costs for student and staff transportation from the sending schools to the home school and other project-related transportation such as field trips.

22a. Are any of the students/staff in your IRIT project transported on a scheduled basis for the purpose of receiving IRIT instruction?

☐ Yes
☐ No (Go to Q. 24)

---

b. If yes please indicate the type(s) of transportation used. Check all that apply.

☐ Contracted buses
☐ District-owned buses
☐ Contracted mini-bus/van
☐ Reimbursed personal auto
☐ Non-reimbursed personal auto
☐ Other (Specify): ______________________________

---

23. Please fill in the table below indicating the number of student/staff round trips per week and the cost (if any) per mode of transportation and round-trip distance for each different trip route.

*Route	Mode (see previous question)	Number of Weekly Student/Staff Round Trips	Average Round Trip Distance	Cost (please specify units)

*This is only to aid the respondent in filling out the table.

---

24. Are any field trips or other special trips provided as part of the IRIT project?

[ ] Yes
[ ] No (Go to Q. 25)

If yes please fill in the table below.

Trip Destription*	Mode (school bus, charter bus, etc.)	Number of Annual Student/Staff Round Trips	Average Round Trip Distance	Cost (please specify units)

*This is only to aid the respondent in filling out the table

IRIT TECHNICAL ASSISTANCE

In this section we are interested in any technical assistance you have received from professionals external to the IRIT project. Technical assistance is defined as any assistance and/or advice received in implementing the project, selecting personnal, training staff and personnel, or evaluating the impact and effectiveness of the program. We are interested in services that are significant (involving at least one man-hour of an individual's time who is not on the IRIT staff). Examples would include any contacts with the originating Project IRIT site, professional consultants, publishers' representatives, or evaluation specialists.

Do not include contacts with representatives from USOE, Stanford Research Institute, or RMC Research Corporation.

25. Please complete the following chart providing one line of the appropriate information for each separate technical assistance occurrence. If no assistance was obtained, please so indicate.

Form of Technical Assistance (consultant, speaker, etc.)	Brief Description of type of Service Provided	Number of Man-Hours Provided by Professionals External to IRIT	Total Costs for Service if any)

OTHER

26. If any resources (with or without cost to the I.R.I.T. budget) have been overlooked by this questionnaire, please describe them below. Be as specific as possible. Please feel free to include any other comments you may have.

27. Approximately how many man-hours were required to complete this questionnaire?

____________Man-hours

Thank you for your time and effort in completing this questionnaire.

IRIT MATERIALS LIST

This list is not comprehensive. If you have purchased items not on this list, please be sure to include them also.

McGraw Programmed Readers
Phonics is Fun
Speech-to-Print Phonics Kit
Phonics We Use
Webster Masters
Read & Think
Universal Workbooks in Phonics
Hayes Language Drills & Tests
Learning Phonics (& Learning to Spell)
Bank Street
Ginn 360 Series
Merrill Linguistic Readers
SRA Linguistic Readers
SRA Satellites
SRA Reading Kits 1a, 1b
Mission Road (Launch, Challenge)
Miniature Library
Literature Appreciation Kit
Barnell-Loft Comprehension Series (a-f)
Random House Reading Program
Scholastic Individualized Reading
Treasure Check (2nd grade)
First Talking Story Book Box
Classroom Library Packet
Macmillan "This is _________" books
Benefit Press Book Series
Individualized Reading Series
Holt Basic Dictionary
Dolch My Puzzle Book (I & II)
Snoopy Dictionary
Hayes Phonics Transparencies
Wollensack Teaching Tapes
Reading Skill Builders (cassette)
Imperial Primary Reading Program
EDL Controlled Reader (filmstrip)
Reading and Thinking Skills (masters)
Classic Fairy Tales
Walt Disney's Tales of Jiminy Cricket
Adventure Stories
Tales by Rudyard Kipling
Story Time Favorites
Weston Woods cassettes with paperbacks
Reading Adventures with Mr. & Mrs. Bumba
Ali Baba and the Forty Thieves (Golden)
RCA Camden Records, vol. I & II
Bowmar Records
Walt Disney Story Records
Learning Games--Phonics We Use
Spelling Learning Games
Phonetic Word Builders
Flannel Board: Pictures that Rhyme
Phonetic Rummy
Phonetic Word Drill Cards
Instructo Activity Kits
Consonant Lotto
Vowell Lotto
Take-a-Sound Matching Game
Reading for Meaning Series
Listen and Do Series I & II

Appendix E

RECOMMENDED CONFIGURATION

Project Catch-Up

(Three Labs, 184 Pupils)

	Number	Proportion of Time	Salary/ Benefits	Total Cost
Personnel				
Project Director	1	.50	16,000	8,000
Secretary to P.D.	1	.50	7,000	3,500
Lead Teachers	3	.67	13,000	26,130
Teachers	6	.67	11,000	44,220
Instructional Aides	3	.67	3,700	7,437
Total				89,287

	Costs		
	Three labs	Per lab	Per student
Annual Costs			
Personnel	89,289	29,762	465
Facilities	---	---	---
Materials/Equipment	3,500	1,167	18
Transportation	---	---	---
Technical Assistance	---	152	3
Public Relations	---	107	2
Total			488
Additional Start-Up Costs			
Project Director (Mar-April ½ time)	4,000	1,332	21
Lead Teacher (May-June ½ time)	1,083	361	6
Staff training stipend (2 weeks)	5,500	1,831	29
Materials/Equipment	19,500	6,494	102
Total			156

High Intensity Tutoring

Estimated Costs for Recommended Configuration

(Four Centers: Two Math, Two Reading)

	Number	Proportion of Time	Salary/ Benefits	Total Cost
Personnel				
Project director	1	0.1	16,000	1,600
Secretary	1	0.1	7,000	700
Teachers	4	1.0	13,000	52,000
Aides	8	1.0	3,700	29,600
Total				83,900

	Four Centers	Per Center	Per Pupil	
			Tutees only=60	Tutors plus tutee=140
Annual Costs				
Personnel	83,900	20,975	350	150
Facilities	---	---	---	---
Materials/Equipment*	---	---	---	---
Transportation	---	---	---	---
Technical Assistance	428	107	2	1
Public Relations	---	---	---	---
Rewards (Tutee and Tutor)	2,000	500	8	4
Total		21,582	360	154
Additional Start-up Costs				
Project Director (April-Aug. 25%)	1,667	417	7	3
Staff training stipend (2 weeks)	2,166	541	9	4
Materials/equipment*	2,000	500	8	4
Total		1,458	24	10

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*Materials are nonconsumable. They may be amortized over about five years.